

The image shows a modern brick building with large glass windows. A sign above the entrance reads "OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM". The building is surrounded by greenery and flowers.

Comprehensive Annual Financial Report

*Oregon Public Employees Retirement System
An Agency of the State of Oregon*

For the fiscal year ended June 30, 2017

***Oregon Public Employees
Retirement System***
An Agency of the State of Oregon

***Comprehensive Annual
Financial Report***
For the Fiscal Year Ended June 30, 2017

Steven Patrick Rodeman
Executive Director

Kyle J. Knoll
Chief Administration Officer

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Introductory Section



Oregon

Kate Brown, Governor

Public Employees Retirement System

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December 1, 2017

Public Employees Retirement Board
Oregon Public Employees Retirement System
11410 SW 68th Parkway
Tigard, Oregon 97223

We are pleased to submit the Comprehensive Annual Financial Report (CAFR) of the Oregon Public Employees Retirement System (PERS or the System) for the fiscal year ended June 30, 2017. This report includes all funds over which the Public Employees Retirement Board (Board) exercises authority. These funds were established to provide retirement, death, and disability benefits to members; administer retiree health insurance programs; and oversee the state-sponsored deferred compensation program. As of June 30, 2017, PERS provided services to 904 employers and to over 360,000 active, inactive, and retired members and beneficiaries.

The CAFR is intended to fulfill the legal requirements of Oregon Revised Statute (ORS) 238.630. PERS management is responsible for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures.

Macias Gini & O'Connell LLP (MGO) has audited the accompanying financial statements in accordance with generally accepted auditing standards and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, and the independent auditor's report is included in this report.

Management's Discussion and Analysis

Management's Discussion and Analysis (MD&A) provides a narrative introduction, overview, and analysis to accompany the basic financial statements. This letter of transmittal is designed to complement MD&A and should be read in conjunction with it. We would like to direct your attention to MD&A that begins on page 17.

Economic Condition and Major Initiatives

The economic condition of PERS is affected primarily by investment earnings. A comparative analysis of investment rates of return is presented on page 27 of this report.

Major Initiatives

Strategic Management System

PERS continues to evolve its outcome-based management system to improve operational performance and organizational alignment. This process-based system integrates problem solving and decision making with active engagement from the front-line staff who perform the daily work.

In 2015, the management system was reevaluated and confirmed as the foundation for PERS' 2015-2020 Strategic Plan. Four strategic priorities were identified, with several areas of focus and specific, achievable goals and objectives related to the focus areas:

1. Organizational Management and Development,
2. Member Services and Communications,
3. Data Reliability, and
4. Information Governance, Security, and Technology.

For each of the four strategic priorities, PERS is using existing strategic and operational planning functions to prioritize and allocate resources for each of the strategies. Strategies will be executed with a variety of approaches, including problem solving, project management, breakthrough initiatives, and integration into core business practices. Specific performance metrics will be identified for tracking our progress as part of strategy initiation.

Supporting our goals are six core operating processes and six core supporting processes. Each process has an owner, sub processes, and outcome measures to monitor and document our progress. Quarterly target review meetings are held to review our progress and identify areas for improvement.

Information Security

PERS is working with the Office of State Chief Information Officer to unify and centralize information security statewide. A formal Information Security Program was developed specific to PERS, along with the approved funding for capital and resources.

Disaster Recovery Infrastructure

PERS is working to update its Disaster Recovery Plan. Activities include identifying high-risk areas needing immediate attention and establishing a discrete Business Continuity Program.

In-house Individual Account Program (IAP) Administration

The Oregon Investment Council, responsible for all PERS fund investments, has approved the transition to a Target-Date Fund investment methodology for all IAP accounts beginning January 1, 2018. PERS will communicate with members about this investment transition, which will be visible to most members in Spring 2019 when member annual statements are distributed reflecting 2018 earnings.

Oregon Supreme Court Decision: *Moro*

In 2015, the Oregon Supreme Court overturned some provisions of 2013 legislation that lowered the annual cost-of-living adjustment (COLA) for benefit recipients. The project to restore the COLA to impacted benefit accounts officially closed June 30, 2017, restoring the COLA to over 150,000 benefit recipients.

Member and Employer Satisfaction Surveys

Our member satisfaction survey conducted in fiscal year 2017 slipped to 87 percent from 92 percent in the previous year. This is due to a campaign to increase survey responses from our active members, which in the past had been minimal. Previous survey results had been based primarily on responses from retired members. Employer satisfaction surveys show overall improvement from 2016 survey results, with an increase to 91 percent this year, up from 88 percent the previous year. Over 87 percent of the member survey respondents and 91 percent of the employer survey respondents rated our overall quality of service as "good" or "excellent."

Oregon Public Employees Retirement System

Changes in Accounting Standards

Governmental Accounting Standards Board Statement (GASB) No. 74, *Financial Reporting for Postemployment Benefit Plans other than Pension Plans*, replaces Statements No. 43, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans, as amended*, and No. 57, *OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans*. It also includes requirements for defined contribution OPEB plans that replace the requirements for those OPEB plans in Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans, as amended*, Statement No. 43, and Statement No. 50, *Pension Disclosures*. This Statement is effective for the fiscal year ended June 30, 2017.

GASB Statement No. 82, *Pension Issues—an amendment of GASB Statements No. 67, No. 68, and No. 73*, was issued to address certain issues that have been raised with respect to Statements No. 67, *Financial Reporting for Pension Plans*, No. 68, *Accounting and Financial Reporting for Pensions*, and No. 73, *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68*. This Statement is effective for the fiscal year ended June 30, 2017, however PERS implemented this pronouncement early for fiscal year ended June 30, 2016.

Assumed Rate of Return on Investments

One of the most significant issues addressed by the Board during the year was a reduction in the assumed rate of return on investments.

At its July 28, 2017 meeting, the Board directed its actuary to reduce the assumed rate of return on investments from 7.50 percent to 7.20 percent for the 2016 System valuation. The new assumed rate will become effective for Tier One earnings crediting in calendar year 2018, and will be used as the basis for updated actuarial equivalency factors effective January 1, 2018.

Financial Information

The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America.

Internal Controls

Management is responsible for establishing and maintaining a system of internal controls to protect PERS' assets from loss, theft, or misuse and to ensure that adequate accounting data is compiled for the preparation of financial statements in conformity with generally accepted accounting principles. There are inherent limitations in the effectiveness of any system of internal controls, including the possibility of human error and the circumvention or overriding of controls. Accordingly, even an effective internal control system may not prevent or detect misstatements and can only provide reasonable assurance with respect to financial statement preparation.

Funding

Member contributions are set by statute at 6.0 percent, 7.0 percent for judges, of covered salary. Employer contributions are established by actuarial valuations conducted biennially in odd-numbered calendar years. PERS' funding objective is to meet long-term benefit promises through contributions that fund benefits as they accrue. An adequate contribution level, when combined with investment earnings, will result in the full funding of benefits as they come due. If the level of funding is adequate, the ratio of assets accumulated to total liabilities will increase, and more income will be available for investment. Prudent investment of assets and returns on those investments should increase the funding base and allow for a more stable employer contribution rate. As of the December 31, 2016 actuarial valuation, PERS has a funded ratio of 75.4 percent for the defined

benefit pension plan it administers, including employer side accounts, and 68.8 percent excluding employer side accounts.

Investments

The Oregon Investment Council (OIC) has statutory authority (ORS 293.701) to establish policies for the investment and reinvestment of PERS funds. The OIC's primary investment objective is to make PERS' investment funds as productive as possible. At the same time, the OIC acts as a prudent investor in managing the PERS portfolio.

An integral part of investment policy is the strategic asset allocation policy. The target investment portfolio mix at fair value as of June 30, 2017, is 37.5 percent public equity, 17.50 percent private equity, 20 percent debt securities, 12.5 percent real estate and 12.5 percent alternatives. In addition to approved asset classes, target asset allocation ranges, and rebalancing policies, other safeguards on investments include the use of an independent custodian, defined limits of delegated authority, and independent audits. The System's long-term investment outlook allows the portfolio to take advantage of the favorable risk-return characteristics of equities by placing more emphasis on this category. The OIC primarily uses external portfolio managers, employing both passive (indexed) and active strategies. The portfolio is broadly diversified among equities, debt securities, real estate, and private equities, with additional diversification achieved through domestic and international investing. PERS securities are held by a custodian, State Street Bank and Trust Company.

PERS' Regular Investment Portfolio (Portfolio) experienced strong gains in fiscal year 2017 with a rate of return of 11.9 percent. This compares with a rate of return of 1.2 percent for fiscal year 2016. The Portfolio's trailing 10-year return was 6.2 percent. Descriptions of specific OIC policies regarding diversification, performance objectives, fees, and asset allocation are found on page 90.

Awards and Acknowledgements

Certificate of Achievement

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to PERS for its Comprehensive Annual Financial Report (CAFR) for the fiscal year ended June 30, 2016. The Certificate of Achievement is a prestigious national award that recognizes conformance with the highest standards of preparation of state and local government financial reports.

To be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized CAFR, whose contents conform to program standards. The CAFR must satisfy both generally accepted accounting principles and applicable legal requirements. A Certificate of Achievement is valid for one year only. PERS has received a Certificate of Achievement for the last 26 consecutive years. We believe our current report continues to conform to the Certificate of Achievement program requirements, and we are submitting it to the GFOA.

Public Pension Standards Award

The Public Pension Coordinating Council (PPCC) awarded the 2017 Public Pension Standards Award to PERS for its plan design and administration.

The PPCC is a coalition of three associations representing public pension funds that cover the vast majority of public employees in the United States. The associations are: the National Association of State Retirement Administrators (NASRA), the National Conference on Public Employee Retirement Systems (NCPERS), and the National Council on Teacher Retirement (NCTR). Public pension standards are intended to reflect minimum expectations for public retirement system management and administration and to serve as benchmarks by which all defined benefit public plans are measured.

Oregon Public Employees Retirement System

This is the fifteenth year the PPCC has offered the award to public retirement systems and the fourteenth consecutive year PERS has applied for and received the award.

Acknowledgments

PERS strives to provide complete and reliable information as a basis for making management decisions, to demonstrate responsible stewardship of assets contributed by members and their employers, and to comply with legal provisions. The compilation of this report reflects the combined efforts of the PERS staff.

This report is available on the PERS website at <http://www.oregon.gov/pers/Pages/Financials/Actuarial-Financial-Information.aspx>, and a link to this document will be e-mailed to all PERS employers. Summary financial information and the website link will be reported in the PERS newsletter, *Perspectives*, which is distributed to active and retired members.

The cooperation of PERS employers contributes significantly to PERS' success and is greatly appreciated. We would also like to express our gratitude to the PERS Board and staff, the OIC, the Office of the State Treasurer staff, our advisors and consultants, and the many other people who work diligently to ensure the successful operation of PERS.

Respectfully submitted,



Steven Patrick Rodeman
Executive Director



Kyle J. Knoll
Chief Administration Officer

Public Employees Retirement Board

The Oregon Legislature has delegated authority to the PERS Board of Trustees to administer the System. The Board is composed of five trustees who administer retirement (service and disability), death, and retiree health insurance benefits. PERS also administers the Oregon Savings Growth Plan, a deferred compensation program for state and local government employees.

All members of the Board are appointed by the governor and confirmed by the state Senate. The governor designates the chairperson. Statute specifies Board membership must be three people with experience in business management, pension management, or investing who are not members of the PERS system; one person who is either an employee of the state in a management position or a person who holds an elective office in the governing body of a participating public employer other than the state; and one person representing public employees and retirees.

As of June 30, 2017, the three Board members representing business management, pension management, or investing are Krystal Gema, John Thomas (Board chair), and Stephen Buckley, respectively. Pat West (vice-chair) was appointed to represent public employees and retirees; Lawrence Furnstahl was appointed to represent public employers. Terms for each member begin and expire with staggered dates.

John Thomas (chair)

John Thomas is the president and CEO of Financial Pathways Group, a fee-based retirement planning firm in Eugene, Oregon. Mr. Thomas co-founded Pacific Benefit Consultants Inc. in 1993 and served in the past capacity as president and manager of the Financial Services Division. John is vice-chair of Advantage Dental and is a past divisional vice-president and chair of the Finance Committee of MDRT, an international association of insurance and financial service professionals located in Chicago. Mr. Thomas previously served as chair of the McKenzie-Willamette Hospital Board of Trustees and was chair of the Lane County Planning Commission and the Lane County Boundary Commission. John is also the past president of the Springfield Area Chamber of Commerce. Mr. Thomas holds a B.A. from Willamette University and an M.S. in financial services from The American College in Bryn Mawr, Pennsylvania. Mr. Thomas holds professional designations of chartered life underwriter, chartered financial consultant, and certified financial planner.

Pat West (vice-chair)

Pat West began his career as a Salem firefighter in 1975 and retired as a captain in 2001. Pat was also the legislative director of the Oregon State Firefighters Association from 1987 to 1998 and president from 1998 to 2008. He served on the Oregon Workers' Compensation Management Labor Advisory Committee, the Governor's Fire Policy Committee, PERS' Legislative Advisory Committee, and the Board of Oregon PERS Retirees, Inc. Pat is a graduate of South Salem High School and Chemeketa Community College. He attended Oregon State University and was in the U.S. Army from 1968 to 1970.

Krystal Gema

During her six years with Portland General Electric's Credit Risk Management, Krystal Gema has actively managed credit exposures and safeguarded the firm's assets from the risk of credit loss in connection with energy trading. She draws on her analytical skills to monitor and analyze energy trading entities' financial conditions for potential financial impacts. Her expertise includes stress testing the firm's trading portfolio, negotiating energy trading contracts and preparing SEC accounting disclosures. Prior to joining PGE, she worked with clients, investment managers, and consultants in Institutional Trust and Custody for US Bank. Gema holds a degree in business finance from Portland State University. She served as a board member for Step It Up, Inc. and is on the board of trustees for Legacy Health-Emanuel Medical Center Foundation. She is a member of the City Club of Portland, Portland Business Alliance, and Urban League of Portland.

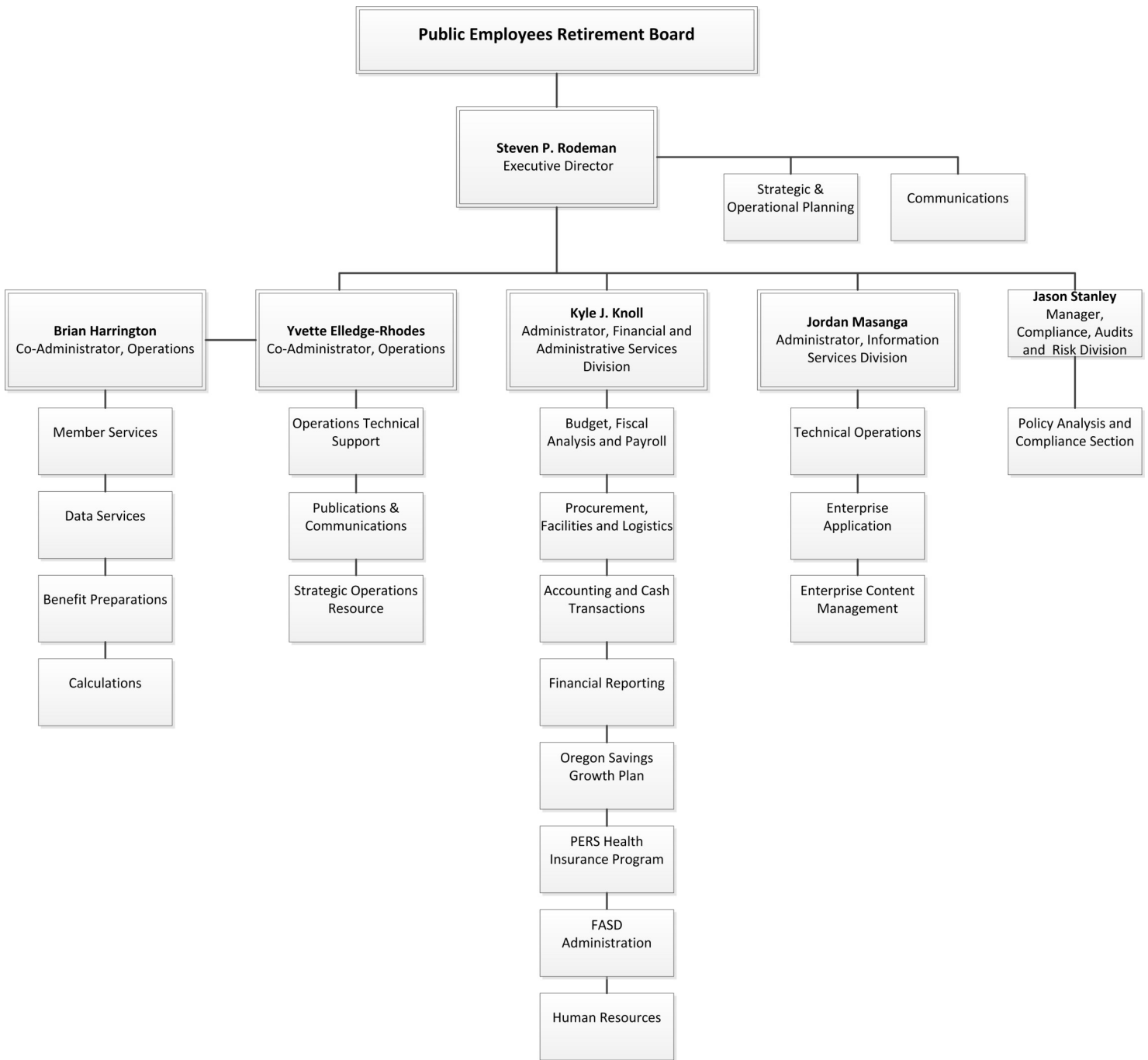
Lawrence Furnstahl

Lawrence J. Furnstahl has three decades experience in the strategic, financial, and operational management of complex organizations—universities and academic health centers—including over 25 years as a CFO. Furnstahl is Executive Vice President and Chief Financial Officer of Oregon Health & Science University, a \$2.3 billion Oregon public corporation with 2,500 faculty, 15,000 staff, 4,000 students and trainees, \$350 million of research, and the state's only major academic health center. Before joining OHSU in January 2011, Furnstahl served as chief financial and strategy officer for the University of Chicago Medical Center and Biological Sciences Division, and University vice president for financial planning for science; senior vice president and chief financial officer for UCSF Stanford Health Care; vice president and chief financial officer for the University of Chicago; and vice president and treasurer and senior executive, patient services for the University of Chicago Hospitals. Furnstahl is a member of the Visiting Committee to the Physical Sciences Division of the University of Chicago, and a board director and former chair of the Hyde Park Art Center. He is a 1983 graduate of the College of the University of Chicago, in economics.

Stephen Buckley

Stephen Buckley is a partner in the Portland, Oregon, law firm Brownstein Rask, LLP. For more than 25 years, Buckley has served as legal counsel for boards of trustees of private sector health and welfare plans and defined benefit, defined contribution, and 401(k) pension plans in Washington, Oregon, and California. Buckley is a speaker at employee benefit conferences sponsored by the International Foundation of Employee Benefit Plans. Buckley is a graduate of Colorado State University and received his Juris Doctorate degree from Willamette University College of Law.

Oregon Public Employees Retirement System



Oregon Public Employees Retirement System Consultants

Actuary
Milliman, Inc.

Legal Counsel
Oregon Department of Justice

Strategic and Organizational Planning
Mass Ingenuity

Insurance Consultant
Butler Partners & Associates LLC

Medical Advisor
F. William Miller, MD

Investments
Investment managers are reported in the Summary of Investment Fees, Commissions, and Expenses on page 94.

Technology
HP Enterprise Services

Auditor
Macias Gini & O’Connell LLP



Government Finance Officers Association

**Certificate of
Achievement
for Excellence
in Financial
Reporting**

Presented to

**Oregon Public Employees
Retirement System**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2016

A handwritten signature in black ink, reading "Jeffrey R. Egan".

Executive Director/CEO



Public Pension Coordinating Council

***Public Pension Standards Award
For Funding and Administration
2017***

Presented to

Oregon Public Employees Retirement System

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

A handwritten signature in black ink that reads "Alan H. Winkle". The signature is written in a cursive style with a large initial 'A'.

Alan H. Winkle
Program Administrator

Financial Section

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Certified
Public
Accountants

Independent Auditor's Report

To the Honorable Kate Brown
Governor of Oregon

To the Public Employees Retirement Board of the
Oregon Public Employees Retirement System
Tigard, Oregon

Report on the Financial Statements

We have audited the accompanying financial statements of the fiduciary activities and proprietary activities of the Oregon Public Employees Retirement System (the System), an agency of the State of Oregon, as of and for the fiscal year ended June 30, 2017, and the related notes to the financial statements, which collectively comprise the System's financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the fiduciary activities and proprietary activities of the Oregon Public Employees Retirement System as of June 30, 2017, and the respective changes in financial position, and where applicable, cash flows thereof for the fiscal year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matters

As discussed in Note 1 to the financial statements, the System implemented the provisions of Governmental Accounting Standards Board Statement (GASBS) No. 74, *Financial Reporting for Postemployment Benefit Plans other than Pension Plans*, for the fiscal year ended June 30, 2017.

As discussed in Note 10 to the financial statements, the total pension liability for the Defined Benefit Pension Plan, based on the actuarial valuation as of December 31, 2015, rolled forward to June 30, 2017, exceeded the plan's fiduciary net position by \$13.5 billion. The actuarial valuation is very sensitive to the underlying assumptions, including a discount rate of 7.50 percent, which represents the long-term expected rate of return.

As discussed in Note 11 to the financial statements, the Retirement Health Insurance Account other postemployment benefit plan's fiduciary net position exceeded the total OPEB liability, based on the actuarial valuation as of December 31, 2015, rolled forward to June 30, 2017, by \$41.8 million. The actuarial valuation is very sensitive to the underlying assumptions, including a discount rate of 7.50 percent, which represents the long-term expected rate of return.

As discussed in Note 11 to the financial statements, the total OPEB liability for the Retiree Health Insurance Premium Account other postemployment benefit plan, based on the actuarial valuation as of December 31, 2015, rolled forward to June 30, 2017, exceeded the plan's fiduciary net position by \$46.6 million. The actuarial valuation is very sensitive to the underlying assumptions, including a discount rate of 7.50 percent, which represents the long-term expected rate of return, and a healthcare cost trend rate of 6.30 percent applied at the beginning of the measurement period and decreasing to an ultimate rate of 4.40 percent.

Our opinions are not modified with respect to these matters.

Other Matters

Prior-Year Comparative Information

The financial statements include partial prior-year comparative information. Such information does not include all of the information required to constitute a presentation in conformity with accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the System's financial statements for the fiscal year ended June 30, 2016, from which such partial information was derived.

We have previously audited the System's 2016 financial statements, and we expressed unmodified audit opinions on the respective financial statements of the fiduciary activities and the proprietary activities in our report dated December 1, 2016. In our opinion, the partial comparative information presented herein as of and for the fiscal year ended June 30, 2016, is consistent, in all material respects, with the audited financial statements from which it has been derived.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that management's discussion and analysis, the schedule of changes in net pension liability/(asset) and related ratios, the schedule of investment returns - defined benefit pension plan, the schedule of defined benefit pension plan employer contributions, the schedule of changes in net OPEB liability/(asset) and related ratios - other postemployment benefit plans - RHIA, the schedule of investment returns - other postemployment benefit plans - RHIA, the schedule of changes in net OPEB liability/(asset) and related ratios - other postemployment benefit plans - RHIPA, the schedule of investment returns - other postemployment benefit plans - RHIPA, the schedule of OPEB - RHIA plan employer contributions, the schedule of OPEB - RHIPA plan employer contributions, and the schedule of claims development information, as listed in the table of contents, be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the System's financial statements. The other supplementary information, introductory, investment, actuarial, and statistical sections, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the financial statements.

The other supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the other supplementary information is fairly stated, in all material respects, in relation to the financial statements as a whole.

The introductory, investment, actuarial and statistical sections have not been subjected to the auditing procedures applied in the audit of the financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 1, 2017 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

Macias Gini & O'Connell LLP

Sacramento, California
December 1, 2017

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MANAGEMENT’S DISCUSSION AND ANALYSIS

This section presents management’s discussion and analysis of the Oregon Public Employees Retirement System’s (PERS or the System) financial performance during the fiscal year ended June 30, 2017. It is a narrative overview and analysis that we present in conjunction with the Letter of Transmittal included in the Introductory Section of this Comprehensive Annual Financial Report (CAFR). It should also be read in conjunction with PERS’ basic financial statements, as presented in this report.

PERS is primarily responsible for administering retirement benefits, health benefits, and supplemental retirement savings plans. PERS comprises six funds: a defined benefit pension plan, an individual account-based benefit plan, two other postemployment benefit plans, a deferred compensation plan, and a proprietary fund.

OVERVIEW OF THE FINANCIAL STATEMENTS AND ACCOMPANYING INFORMATION

Management’s discussion and analysis provides an introduction to and overview of the basic financial statements, which comprise the following components: Fund Financial Statements and Notes to the Basic Financial Statements. Collectively, this information presents the combined net position restricted for pension benefits, other postemployment benefits (OPEB), and deferred compensation, along with the unrestricted net position of the proprietary fund administered by PERS as of June 30, 2017. It also summarizes the combined changes in net position restricted for pension benefits and OPEB, the changes in unrestricted net position, and the cash flows of the proprietary fund for the year then ended, along with an actuarial measurement of the employers’ total pension and other postemployment benefit liabilities compared to the fiduciary net position of the defined benefit pension and other postemployment benefit plans. The information available in each of these sections is briefly summarized below:

Fund Financial Statements

At June 30, 2017, financial statements are presented for the two types of funds administered by PERS: fiduciary funds, where PERS acts in a fiduciary capacity as a trustee for others and is responsible for administering the assets placed under its control; and a proprietary fund, where fees are charged for services provided and the focus is on determining financial position, operating and non-operating income, cash flows and changes in net position.

Fiduciary Funds – include the Defined Benefit Pension Plan, Oregon Public Service Retirement Plan Individual Account Program (IAP), the Retirement Health Insurance Account (RHIA), the Retiree Health Insurance Premium Account (RHIPA), and the Deferred Compensation Plan. Fiduciary funds are used to account for resources held for the benefit of PERS participants. A statement of fiduciary net position and a statement of changes in fiduciary net position are presented for the fiduciary funds as of and for the year ended June 30, 2017, along with comparative total information as of and for the year ended June 30, 2016. These financial statements reflect the resources available to pay benefits to retired members and other beneficiaries as of year-end, as well as the changes in those resources during the year.

Proprietary Fund – includes the Standard Retiree Health Insurance Account (SRHIA), an enterprise fund. A statement of net position, a statement of revenues, expenses, and changes in net position, and a statement of cash flows are presented for the proprietary fund as of and for the year ended June 30, 2017, along with comparative total information as of and for the year ended June 30, 2016. These financial statements reflect the net position, changes in net position, and cash flows resulting from PERS business-type activities.

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Notes to the Basic Financial Statements

Note 1 – provides a summary of significant accounting policies, including the basis of accounting for each of the fund types: investment accounting policies, management’s use of estimates, and other significant accounting policies.

Note 2 – provides a general description of PERS as well as a description of each of the funds administered by PERS. Information regarding employer and member participation in the pension plans administered by PERS is also provided.

Note 3 – provides information on the System’s account receivables and payables.

Note 4 – provides information on cash and cash equivalents. The note also describes investments, including the techniques and inputs used to determine fair value, investing authority, investment risk categorizations, and additional information about unfunded investment commitments, securities lending, and derivatives.

Note 5 – provides information about capital assets used in plan operations.

Note 6 – provides information about PERS’ long-term debt.

Note 7 – provides information on reserves.

Note 8 – provides information on potential contingencies of PERS.

Note 9 – provides information on the estimated claims liability of the SRHIA.

Note 10 – provides information on the Employers’ Net Pension Liability.

Note 11 – provides information on Employers’ Net OPEB Liability/(Asset).

Note 12 – provides information about important events impacting PERS subsequent to June 30, 2017.

Required Supplementary Information

In addition to the financial statements and notes explained above, this CAFR includes ten additional Required Supplementary Information schedules with historical trend information, as described below:

- The Schedule of Changes in Net Pension Liability/(Asset) and Related Ratios, page 71, presents the pension plan’s total pension liability, fiduciary net position, net pension liability, the change in net pension liability, fiduciary net position as a percentage of the total pension liability, total covered payroll, and net pension liability as a percentage of covered payroll. This required 10-year trend schedule will disclose future years prospectively, beginning with fiscal year ended June 30, 2014.
- The Schedule of Investment Returns – Defined Benefit Pension Plan, page 71, presents for each fiscal year the annual money-weighted return (internal rate of return) on pension plan investments, net of pension plan investment expense. This required 10-year trend schedule will disclose future years prospectively, beginning with fiscal year ended June 30, 2014.

- The Schedule of Defined Benefit Employer Pension Plan Contributions, on pages 72 – 73, contains a 10-year schedule comparing the amount of actuarially determined contributions with the amount of contributions recognized in relation to the actuarially determined contributions, and showing whether there is a contribution deficiency or excess. The schedule also shows the amounts of contributions recognized by the pension plan in relation to the actuarially determined contributions as a percentage of covered payroll.
- The Schedules of Changes in Net OPEB Liability/(Asset) and Related Ratios, for RHIA is on page 74 and RHIPA on page 75, presents the OPEB plan's total OPEB liability, fiduciary net position, net OPEB liability, and the change in net OPEB liability, fiduciary net position as a percentage of the total OPEB liability, total covered payroll, and net OPEB liability as a percentage of covered payroll. These required 10-year trend schedules will disclose future years prospectively, beginning with fiscal year ended June 30, 2017.
- The Schedules of Investment Returns – Other Postemployment Benefit Plans, for RHIA and RHIPA, on pages 74 and 75, respectively, presents for each fiscal year the annual money-weighted return (internal rate of return) for each of the OPEB plan investments, net of OPEB plan investment expense. These required 10-year trend schedules will disclose future years prospectively, beginning with fiscal year ended June 30, 2017.
- The Schedules of OPEB Employer Plan Contributions for both RHIA and RHIPA, on pages 76 – 78, contain a 10-year schedule comparing the amount of actuarially determined contributions with the amount of contributions recognized in relation to the actuarially determined contributions, and showing whether there is a contribution deficiency or excess. The schedules also show the amounts of contributions recognized by the OPEB plans in relation to the actuarially determined contributions as a percentage of covered payroll.
- The Schedule of Claims Development Information for SRHIA, page 80, shows earned revenues and expenses over the past seven years.

Other Supplementary Information

In addition to the Required Supplementary Information, there are five Other Supplementary Information schedules, as described below:

- The Schedule of Fiduciary Net Position and Schedule of Changes in Fiduciary Net Position – Defined Benefit Pension Plan, pages 81 and 82, display the components of the defined benefit pension plan.
- The Schedule of Administrative Expenses and Schedule of Payments to Consultants and Contractors on pages 83 and 84 show the costs of managing the System.
- The Summary of Investment Fees, Commissions, and Expenses on page 85 provides the detail of investment-related expenses included in the Investment Expense line item reported in the Statement of Changes in Fiduciary Net Position.

FIDUCIARY FUNDS

- PERS' assets exceed its liabilities at the close of fiscal year 2017, with \$77,044.8 million restricted for pension, IAP, OPEB, and deferred compensation benefits.

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- Fiduciary net position increased by \$5,713.2 million, or 8.0 percent, during the fiscal year, as the value of investments increased 8.7 percent.
- PERS' funding objective is to meet long-term benefit obligations. As of December 31, 2016, the date of the latest actuarial funding valuation, the funded ratio of the defined benefit pension plan, including side accounts, was 75.4 percent. In general, this means that for every dollar of pension benefits due, PERS has approximately \$0.75 available for payment.
- Revenues (additions to fiduciary net position), which include member and employer contributions of \$1,824.0 million and net income from investment activities totaling \$8,462.2 million, increased 381.4 percent to \$10,681.1 million, for fiscal year 2017, compared to \$2,218.9 in fiscal year 2016. This increase is primarily attributed to a \$8,359.0 increase in revenues from investment activities compared to the prior year.
- Expenses (deductions from fiduciary net position) increased 4.5 percent to \$4,967.9 million during the fiscal year from \$4,752.4 million in fiscal year 2016, primarily due to a similar increase in benefit payments.

FIDUCIARY NET POSITION

The condensed comparative summaries of Fiduciary Net Position below, and on page 21 demonstrate that the pension trust funds are primarily focused on investments and net position (reserves).

- The net position of the Defined Benefit Pension Plan increased approximately \$4,289.6 million, or 6.9 percent, during the year ended June 30, 2017, primarily due to the \$4.5 billion, or 7.5 percent, increase in the value of investments, offset by \$1.0 billion increase in payables for pending investment purchases. There was also a \$716.0 million increase in cash, which was made available primarily for the July 1, 2017 pension roll, which fell on a Saturday.
- The net position of the IAP increased approximately \$1,127.0 million, or 15.6 percent, during the year ended June 30, 2017, as the value of investments increased \$1,183.7 million, or 17.0 percent.

TABLE 1
FIDUCIARY NET POSITION, PENSION
(in thousands) As of June 30

	Defined Benefit Pension Plan		Individual Account Program		Deferred Compensation Plan	
	2017	2016	2017	2016	2017	2016
Cash and Receivables	\$ 4,980,935	\$ 4,264,917	\$ 561,495	\$ 472,842	\$ 71,443	\$ 65,795
Investments at Fair Value	64,282,301	59,792,054	8,148,037	6,964,348	1,706,284	1,493,347
Securities Lending						
Collateral	1,447,743	1,332,772	185,211	156,920	29	11
Other	37,747	37,643	308	289	–	–
Total Assets	<u>70,748,726</u>	<u>65,427,386</u>	<u>8,895,051</u>	<u>7,594,399</u>	<u>1,777,756</u>	<u>1,559,153</u>
Investment Purchases	2,886,715	1,904,658	320,542	182,107	711	645
Securities Lending						
Payable	1,448,180	1,335,499	185,267	157,240	29	11
Other Payables	42,127	105,170	22,332	15,179	6,906	710
Total Liabilities	<u>4,377,022</u>	<u>3,345,327</u>	<u>528,141</u>	<u>354,526</u>	<u>7,646</u>	<u>1,366</u>
Total Net Position	<u>\$ 66,371,704</u>	<u>\$ 62,082,059</u>	<u>\$ 8,366,910</u>	<u>\$ 7,239,873</u>	<u>\$ 1,770,110</u>	<u>\$ 1,557,787</u>

TABLE 2
FIDUCIARY NET POSITION, OTHER POSTEMPLOYMENT BENEFITS
(in thousands) As of June 30

	Retirement Health Insurance Account		Retiree Health Insurance Premium Account	
	2017	2016	2017	2016
Cash and Receivables	\$ 38,446	\$ 32,051	\$ 5,714	\$ 3,394
Investments at Fair Value	500,893	423,495	19,412	12,063
Securities Lending Collateral	11,397	9,548	445	277
Other	56	33	2	1
Total Assets	<u>550,792</u>	<u>465,127</u>	<u>25,573</u>	<u>15,735</u>
Investment Purchases	22,473	13,825	770	321
Securities Lending Payable	11,400	9,568	445	277
Other Payables	5,139	4,831	62	119
Total Liabilities	<u>39,012</u>	<u>28,224</u>	<u>1,277</u>	<u>717</u>
Total Net Position	<u>\$ 511,780</u>	<u>\$ 436,903</u>	<u>\$ 24,296</u>	<u>\$ 15,018</u>

- The net position of the deferred compensation plan increased approximately \$212.3 million, or 13.6 percent, during the year ended June 30, 2017, due to a \$212.9 million, or 14.3 percent, increase in the value of investments.
- The net position of the RHIA increased approximately \$74.9 million, or 17.1 percent, during the year ended June 30, 2017, as Cash and Receivables increased \$6.4 million, or 20.0 percent, and the value of investments grew \$77.4 million, or 18.3 percent. These increases were offset by an \$8.6 million increase in payables for pending investment purchases.
- The net position of the RHIPA increased approximately \$9.3 million, or 61.8 percent, during the year ended June 30, 2017, as the value of investments grew \$7.3 million, or 60.9 percent, and Cash and Receivables increased \$2.3 million, or 68.4 percent.

CHANGES IN FIDUCIARY NET POSITION

Revenues – Additions to Fiduciary Net Position

Additions to Fiduciary Net Position needed to finance retirement benefits are accumulated through the collection of employer and member contributions and through investment income.

- For fiscal year 2017, the financial markets stabilized resulting in large increases in Net investment and Other Income for all plans.
 - ◊ Defined benefit pension plan: Total additions for fiscal year 2017 increased \$7,290.0 million, or 518.7 percent, compared to fiscal year 2016. This increase was primarily attributed to the \$7,246.1 million, or 1,750.6 percent, increase in Net Investment and Other.
 - ◊ IAP: With a \$910.7 million, or 141.6 percent increase in total additions, the \$871.8 million, or 1,139.5 percent, increase in Net Investment and Other Income primarily contributed to the increase.
 - ◊ Deferred compensation plan: had a \$200.3 million, or 181.3 percent increase in total revenues. Like the other plans, this increase was primarily due to the \$185.9 million, or 5,869.1 percent, increase in Net Investment and Other Income, compared to fiscal year 2016.

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- ◇ Retirement Health Insurance Account: Total additions increased \$58.5 million, or 119.8 percent. The increase was primarily due to the \$53.3 million, or 1,255.5 percent, increase in Net Investment and Other Income compared to fiscal year 2016.
- ◇ Retiree Health Insurance Premium Account: Total additions increased \$2.7 million, or 24.1 percent, of which \$1.8 million, or 789.5 percent of the increase over the fiscal year 2016 was due to an increase in Net Investment and Other Income, and a \$0.9 million, or 8.2 percent, increase in Employer Contributions.

Expenses – Deductions from Fiduciary Net Position

Benefit payments, refunds of contributions to members who terminate employment, health insurance premium subsidies, deferred compensation payments, and administrative costs comprise the System's expenses.

- Pension benefit and other payments from the defined benefit pension plan were \$4,405.8 million in fiscal year 2017, a \$158.8 million, or 3.7 percent, increase over fiscal year 2016 expenses of \$4,247 million, primarily due to an increase in service retirements, as well as the annual cost of living adjustment.
- IAP benefit and other payments increased by \$53.6 million, or 14.4 percent, during the year, from \$373.0 million in fiscal year 2016 to \$426.6 million in fiscal year 2017. Accounts withdrawn increased due to an 8.9 percent increase in service retirements for the year.
- Deferred compensation benefits and other expenses increased by \$5.9 million, or 6.3 percent, from \$92.5 million in fiscal year 2016 to \$98.4 million in fiscal year 2017. Benefit payments were higher due to increased retirement activity.
- RHIA healthcare premium and other payments decreased by \$2.4 million, or 6.8 percent, from \$34.9 million in fiscal year 2016 to \$32.5 million in fiscal year 2017, This decrease was primarily attributed to a \$2.4 million, or 7.2 percent, decrease in Healthcare Premium Subsidies, due to a decrease in participants.
- RHIPA healthcare premium and other payments decreased by \$329.0 thousand, or 6.7 percent, from \$4.9 million in fiscal year 2016 to \$4.6 million in fiscal year 2017, primarily due to a decrease in participants resulting in decreased Healthcare Premium Subsidies, and RHIPA subsidy tier allocation, which is based on the years of service.

The tables on page 23 show condensed comparative summaries of the changes in fiduciary net position and reflect the activities of the plans administered by the System.

TABLE 3
CHANGES IN FIDUCIARY NET POSITION, PENSION
(in thousands) For the Years Ending June 30:

	Defined Benefit Pension Plan		Individual Account Program		Deferred Compensation Plan	
	2017	2016	2017	2016	2017	2016
Additions:						
Employer Contributions	\$ 1,022,201	\$ 977,332	\$ –	\$ –	\$ –	\$ –
Member Contributions	13,178	14,214	605,277	566,450	121,702	107,286
Net Investment and Other Income	7,660,056	413,916	948,360	76,509	189,041	3,167
Total Additions	<u>8,695,435</u>	<u>1,405,462</u>	<u>1,553,637</u>	<u>642,959</u>	<u>310,743</u>	<u>110,453</u>
Deductions:						
Pension Benefits	4,346,283	4,193,308	417,119	364,549	97,089	91,351
Other	59,507	53,721	9,481	8,477	1,331	1,203
Total Deductions	<u>4,405,790</u>	<u>4,247,029</u>	<u>426,600</u>	<u>373,026</u>	<u>98,420</u>	<u>92,554</u>
Net Increase (Decrease)	4,289,645	(2,841,567)	1,127,037	269,933	212,323	17,899
Net Position						
Beginning of Year	62,082,059	64,923,626	7,239,873	6,969,940	1,557,787	1,539,888
End of Year	<u>\$ 66,371,704</u>	<u>\$ 62,082,059</u>	<u>\$ 8,366,910</u>	<u>\$ 7,239,873</u>	<u>\$ 1,770,110</u>	<u>\$ 1,557,787</u>

TABLE 4
CHANGES IN FIDUCIARY NET POSITION, OTHER POSTEMPLOYMENT BENEFITS
(in thousands) For the Years Ending June 30:

	Retirement Health Insurance Account		Retiree Health Insurance Premium Account	
	2017	2016	2017	2016
Additions:				
Employer Contributions	\$ 49,786	\$ 44,588	\$ 11,864	\$ 10,967
Net Investment and Other Income	57,566	4,247	2,028	228
Total Additions	<u>107,352</u>	<u>48,835</u>	<u>13,892</u>	<u>11,195</u>
Deductions:				
Healthcare Premium Subsidies	31,187	33,603	4,328	4,683
Other	1,288	1,256	286	260
Total Deductions	<u>32,475</u>	<u>34,859</u>	<u>4,614</u>	<u>4,943</u>
Net Increase	74,877	13,976	9,278	6,252
Net Position				
Beginning of year	436,903	422,927	15,018	8,766
End of Year	<u>\$ 511,780</u>	<u>\$ 436,903</u>	<u>\$ 24,296</u>	<u>\$ 15,018</u>

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PROPRIETARY FUND

Standard Retiree Health Insurance Account (SRHIA) uses an enterprise fund to account for the activities of PERS' health insurance program, a public entity risk pool.

NET POSITION

- The net position of the SRHIA as of June 30, 2017, was \$55.3 million, a \$7.9 million, or 16.7 percent increase over fiscal year 2016. This increase was primarily due an increase in Cash and Cash Equivalents, offset by a reduction of Reinsurance Reimbursements and Rebate Receivables, and a decrease in Other Payables resulting from decreased healthcare and other payments.

CHANGES IN NET POSITION

- SRHIA insurance premium and other revenue for the year ended June 30, 2017, was \$157.5 million, a \$40.4 million, or 20.4 percent, decrease from fiscal year 2016. This decrease is primarily due to the reduction in Insurance Premium revenue as the result of a full year since the movement of the Moda Advantage Medical Plan from a minimum premium funding arrangement to a conventionally insured plan, beginning in January 2016.
- SRHIA healthcare and other payments for the year ended June 30, 2017, decreased \$55.7 million, or 27.1 percent, from \$205.3 million in fiscal year 2016 to \$149.6 million in fiscal year 2017 due primarily to the reductions in claims expense as a result of moving the Moda Advantage Medical Plan to a conventionally insured plan. The move to the conventionally insured plan also resulted in \$9.8 million, or 37.1 percent, lower third-party administrative expenses.

The tables below show the condensed summary of net position and the condensed summary of changes in revenues, expenses, and net position for SRHIA.

TABLE 5
NET POSITION, PROPRIETARY FUND
(in thousands) As of June 30

	Standard Retiree Health Insurance Account	
	<u>2017</u>	<u>2016</u>
Cash and Receivables	\$ 66,728	\$ 63,621
Securities Lending Collateral	194	660
Total Assets	<u>66,922</u>	<u>64,281</u>
Deferred Outflow of Resources:		
Pensions	<u>202</u>	<u>29</u>
Claims Payable	8,700	9,200
Other Payables	2,528	6,910
Securities Lending Payable	194	660
Net Pension Liability	378	114
Other Liabilities	<u>50</u>	<u>28</u>
Total Liabilities	<u>11,850</u>	<u>16,912</u>
Deferred Inflow of Resources:		
Pensions	<u>4</u>	<u>28</u>
Total Net Position	<u>\$ 55,270</u>	<u>\$ 47,370</u>

TABLE 6
REVENUES, EXPENSES, AND CHANGES IN NET POSITION, PROPRIETARY FUND
(in thousands) For the Years Ending June 30:

	Standard Retiree Health Insurance Account	
	<u>2017</u>	<u>2016</u>
Revenues:		
Insurance Premiums	\$ 128,963	\$ 168,655
Reinsurance Reimbursements	28,211	29,008
Investment Income	379	259
Total Revenues	<u>157,553</u>	<u>197,922</u>
Expenses:		
Claims	133,601	184,613
Change in Estimated Liabilities	(500)	(5,598)
Administrative and Other Expense	16,531	26,301
Transfers to Other Funds	21	-
Total Expenses	<u>149,653</u>	<u>205,316</u>
Net Increase/(Decrease)	7,900	(7,394)
Net Position		
Beginning of Year	<u>47,370</u>	<u>54,764</u>
End of Year	<u>\$ 55,270</u>	<u>\$ 47,370</u>

PLAN MEMBERSHIP

The table below reflects the Defined Benefit Pension Plan membership as of the end of the fiscal years.

TABLE 7
CHANGES IN PLAN MEMBERSHIP
As of June 30:

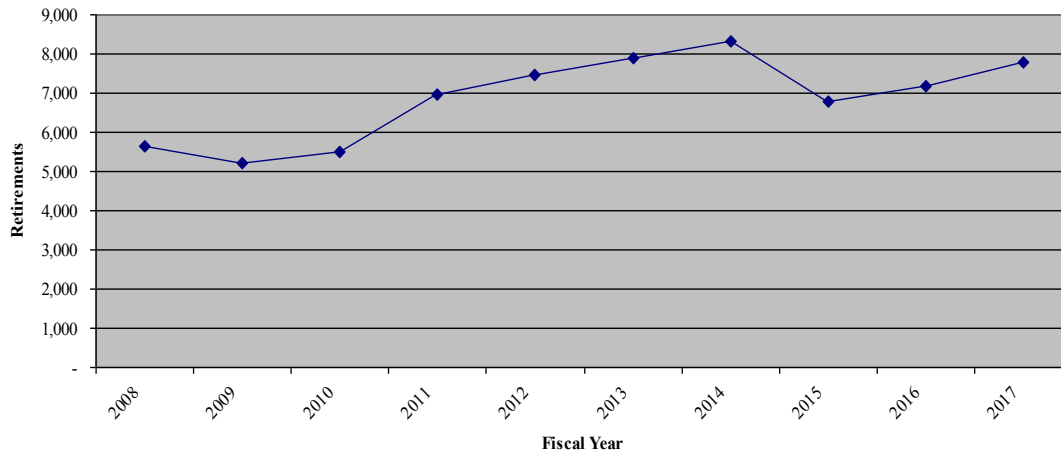
	<u>2017</u>	<u>2016</u>	<u>Percentage Change</u>
Retirees and beneficiaries benefits:			
General	129,578	125,742	3.1 %
Police and Fire	<u>11,437</u>	<u>10,693</u>	7.0
Total	<u>141,015</u>	<u>136,435</u>	3.4
Current and terminated employees:			
Vested:			
General	200,157	198,055	1.1
Police and Fire	16,816	17,307	(2.8)
Nonvested:			
General	1,850	2,141	(13.6)
Police and Fire	<u>191</u>	<u>98</u>	94.9
Total	<u>219,014</u>	<u>217,601</u>	0.6 %

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SERVICE RETIREMENTS

Service retirements increased by 8.9 percent in fiscal year 2017, primarily due to increased legislative conversation about possible changes to the benefit structure and the baby boomer population reaching retirement age. Service retirements in fiscal year 2017 were 7,798 compared to 7,163 in fiscal year 2016.

TABLE 8
SERVICE RETIREMENTS
By Fiscal Year



NET PENSION LIABILITY

The Employers' Net Pension Liability (NPL) as of June 30, 2017, was \$13,480.0 million, compared to a Net Pension Liability of \$15,012.3 million as of June 30, 2016. The decrease in Employers' Net Pension Liability was primarily due to an increase in Fiduciary Net Position as net investment income exceeded benefit payments. The increase in Fiduciary Net Position was offset by a \$2,757.3 million increase in Total Pension Liability.

NET OPEB LIABILITY/(ASSET)

GASB 74 was implemented as of June 30, 2017, resulting in the Employers' Net OPEB Asset for RHIA of \$41.8 million as of June 30, 2017, and an Employer's Net OPEB Liability for RHIPA of \$46.6 million.

INVESTMENT ACTIVITIES

During fiscal year 2017, investments increased by 8.7 percent over the prior fiscal year as markets moved towards stability. Holdings in all asset classes experienced positive investment returns. The Alternative portfolio increased substantially by \$1,190.1 million, or 40.4 percent, followed by Opportunity \$223.0 million, or 16.4 percent. The other portfolios increased as follows: Public Equity, which increased \$3,162.0 million, or 11.7 percent; Private Equity \$1,063.0 million, or 7.6 percent; and Real Estate \$133.0 million, or 1.6 percent; and Debt Securities \$200.0 million, or 1.4 percent. One-year returns on asset classes and comparative benchmarks are presented in the table on page 27.

Table 9
Investment Results*
Periods Ending June 30,

	2017	2016
Total Portfolio, Excluding Variable Account	11.92 %	1.21 %
Policy Benchmark ¹	13.02	1.62
Variable Account	19.52	(3.43)
Benchmark: MSCI All Country World Investable Market Index Net	19.01	(3.87)
Domestic Stocks	19.61	(0.28)
Benchmark: Russell 3000 Index	18.51	2.14
International Stocks	21.11	(8.12)
Benchmark: MSCI All Country World ex-US Investable Market Index Net	20.43	(9.61)
Fixed Income Segment	1.48	3.63
Benchmark: Custom Index ²	0.41	3.67
Real Estate ³	6.94	10.86
Benchmark: Oregon Custom Real Estate Benchmark ³	7.36	-
Benchmark: NCREIF Property Index ³	-	11.81
Private Equity ⁴	12.61	4.52
Benchmark: Russell 3000 Index + 300 bps	21.56	2.65
Alternative Equity	11.03	(0.79)
Benchmark: Consumer Price Index + 400bps	5.69	5.04
Opportunity Portfolio	6.18	0.36
Benchmark: Russell 3000 Index	18.51	2.14

The rates of return reported in the Investment Section are based on a time-weighted rate of return methodology based upon market values, unless disclosed otherwise in the footnotes to the associated tables.

* Investment Results are based upon OIC asset classes as determined by each manager's primary investment type, not the financial statement classification of individual holdings.

¹ From May 1, 2008 to September 30, 2013, the policy benchmark was 16% Russell 3000+300 Bps quarter lag, 27% Oregon Custom Fixed Income (FI) Benchmark, 11% National Council of Real Estate Investment Fiduciaries (NCREIF) Property Index quarter lag and 46% Morgan Stanley Capital International All Country World Index (MSCI ACWI). From October 1, 2013 to March 31, 2016, the policy benchmark was 20% Russell 3000+300 Bps quarter lag, 23.5% Oregon Custom FI Benchmark, 12.5% NCREIF Property Index quarter lag, 41.5% MSCI ACWI and 2.5% CPI+4%.

From April 1, 2016 to June 30, 2016 the policy benchmark was 20% Russell 3000+300 Bps quarter lag, 23.5% Oregon Custom FI Benchmark, 12.5% Oregon Custom Real Estate Benchmark, 41.5% MSCI AC World Index and 2.5% CPI+4%.

From July 1, 2016 to present the policy benchmark is 20% Russell 3000+300 Bps quarter lag, 22.5% Oregon Custom FI Benchmark, 12.5% Oregon Custom Real Estate Benchmark, 40% MSCI ACWI IMI Net and 5% CPI+4%.

² From March 1, 2011 to December 31, 2013, index was 60% Barclays Capital (BC) U.S. Universal Index, 20% S&P/LSTA Leveraged Loan Index, 10% JP Morgan Emerging Market Bond Index, Global Index, and 10% Bank of America Merrill Lynch (BofA ML) High Yield Master II Index.

From January 1, 2014 to February 29, 2016, index was 40% BC U.S. Aggregate Bond, 40% BC U.S. 1-3 Year Government/Credit Bond Index, 15% S&P LSTA Leveraged Loan Index, and 5% BofA ML High Yield Master II Index.

From March 1, 2016 to present, index is 46% Barclays Aggregate Bond, 37% Barclays Treasury, 13% S&P LSTA and 4% BofA ML High Yield Master II.

³ Through March 31, 2016, the Oregon Custom Real Estate Benchmark was made up of the NCREIF Property quarter lag Index.

From April 1, 2016, the benchmark, is made up of the NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE) quarter lag Net of Fees.

⁴ Beginning in September 2010, the return combines the estimated return from the most recent quarter with a revision component that trues up the past two quarters' reported returns with the past two quarters' actual returns.

Oregon Public Employees Retirement System

CURRENTLY KNOWN FACTS, CONDITIONS, OR DECISIONS

The following are currently known facts, conditions, or decisions that are expected to have a significant effect on the System's financial position or results of operations:

- ◆ The PERS Board lowered the assumed rate for PERS transactions to 7.20 percent at its July 28, 2017 meeting, effective January 1, 2018 for Tier One interest crediting and updated actuarial equivalency factors. This decision was based on data from the investment forecasts and review of the guiding principles presented by the actuaries.

CONTACTING THE SYSTEM'S FINANCIAL MANAGEMENT

This financial report is designed to provide plan participants, employers, citizens, taxpayers, and others with a general overview of the System's finances and to demonstrate the Board's oversight of the System. If you have questions about this report or need additional financial information, please contact the Financial and Administrative Services Division Administrator at P.O. Box 23700, Tigard, Oregon 97281-3700.

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Oregon Public Employees Retirement System

Statement of Fiduciary Net Position

Pension and Other Postemployment Plans

As of June 30, 2017, with Comparative Totals as of June 30, 2016

	Defined Benefit Pension Plan	Oregon Public Service Retirement Plan Individual Account Program	Defined Benefit OPEB Plans	
			Retirement Health Insurance Account	Retiree Health Insurance Premium Account
Assets:				
Cash and Cash Equivalents	\$ 2,786,910,822	\$ 337,268,438	\$ 23,517,947	\$ 1,876,101
Receivables:				
Employer	63,108,607	—	1,784,718	3,275,019
Plan Member	—	13,815,187	—	—
Interest and Dividends	122,013,644	19,194,885	959,459	37,184
Member Loans	—	—	—	—
Investment Sales and Other Receivables	1,470,533,936	182,209,898	11,281,046	478,247
Transitional Liability	537,321,121	—	—	—
Total Receivables	2,192,977,308	215,219,970	14,025,223	3,790,450
Due from Other Funds	1,047,007	9,007,085	902,456	47,542
Investments:				
Debt Securities	12,929,015,710	1,653,830,906	101,667,795	3,940,200
Public Equity	25,419,900,123	3,176,905,142	195,297,438	7,568,878
Real Estate	7,674,327,072	981,670,962	60,347,356	2,338,800
Private Equity	13,218,510,001	1,690,861,923	103,944,244	4,028,426
Alternative Equity	3,642,981,763	465,996,481	28,646,722	1,110,222
Opportunity Portfolio	1,397,566,584	178,771,444	10,989,817	425,917
Total Investments	64,282,301,253	8,148,036,858	500,893,372	19,412,443
Securities Lending Collateral	1,447,742,632	185,210,671	11,396,782	445,014
Prepaid Expenses	8,357,807	—	56,286	2,181
Capital Assets at Cost, Net	29,388,708	307,682	—	—
Total Assets	70,748,725,537	8,895,050,704	550,792,066	25,573,731
Liabilities:				
Investment Purchases and Accrued Expenses	2,886,715,116	320,542,085	22,472,879	770,314
Deposits and Other Liabilities	32,169,591	21,543,349	5,110,115	35,518
Due to Other Funds	9,957,084	788,654	29,245	26,825
Bonds Payable	—	—	—	—
Securities Lending Collateral Due Borrowers	1,448,180,499	185,266,681	11,400,225	445,148
Total Liabilities	4,377,022,290	528,140,769	39,012,464	1,277,805
Net Position Restricted for Pension and Other Postemployment Benefits	\$ 66,371,703,247	\$ 8,366,909,935	\$ 511,779,602	\$ 24,295,926

The accompanying notes are an integral part of the financial statements.

Deferred Compensation Plan		2017	2016
\$	59,009,620	\$ 3,208,582,928	\$ 2,773,637,889
	–	68,168,344	58,339,472
	–	13,815,187	14,415,424
	402,631	142,607,803	311,078,103
	11,918,643	11,918,643	11,343,303
	112,576	1,664,615,703	1,106,428,173
	–	537,321,121	555,342,138
	<u>12,433,850</u>	<u>2,438,446,801</u>	<u>2,056,946,613</u>
	–	11,004,090	8,413,398
	280,085,259	14,968,539,870	14,768,509,332
	1,426,198,572	30,225,870,153	27,063,910,456
	–	8,718,684,190	8,585,785,027
	–	15,017,344,594	13,954,350,332
	–	4,138,735,188	2,948,607,060
	–	1,587,753,762	1,364,144,854
	<u>1,706,283,831</u>	<u>74,656,927,757</u>	<u>68,685,307,061</u>
	28,960	1,644,824,059	1,499,528,179
	–	8,416,274	5,758,790
	–	29,696,390	32,207,057
	<u>1,777,756,261</u>	<u>81,997,898,299</u>	<u>75,061,798,987</u>
	710,788	3,231,211,182	2,101,555,502
	6,765,440	65,624,013	115,795,021
	140,942	10,942,750	9,546,249
	–	–	667,460
	28,960	1,645,321,513	1,502,595,344
	<u>7,646,130</u>	<u>4,953,099,458</u>	<u>3,730,159,576</u>
\$	<u>1,770,110,131</u>	\$ <u>77,044,798,841</u>	\$ <u>71,331,639,411</u>

Oregon Public Employees Retirement System

Statement of Changes in Fiduciary Net Position Pension and Other Postemployment Plans

For the Fiscal Year Ended June 30, 2017, with Comparative Totals for the Fiscal Year Ended June 30, 2016

	Defined Benefit OPEB Plans			
	Defined Benefit Pension Plan	Oregon Public Service Retirement Plan Individual Account Program	Retirement Health Insurance Account	Retiree Health Insurance Premium Account
Additions:				
Contributions:				
Employer	\$ 1,022,201,249	\$ —	\$ 49,785,501	\$ 11,863,776
Plan Member	13,177,984	605,277,281	—	—
Total Contributions	<u>1,035,379,233</u>	<u>605,277,281</u>	<u>49,785,501</u>	<u>11,863,776</u>
Investment Income:				
Net Appreciation/(Depreciation) in Fair Value of Investments	6,778,799,534	837,940,348	50,964,719	1,801,652
Interest, Dividends and Other Investment Income	1,484,089,087	186,810,235	11,267,984	395,306
Total Investment Income	<u>8,262,888,621</u>	<u>1,024,750,583</u>	<u>62,232,703</u>	<u>2,196,958</u>
Less Investment Expense	<u>(617,442,609)</u>	<u>(78,128,657)</u>	<u>(4,745,158)</u>	<u>(172,058)</u>
Net Investment Income	7,645,446,012	946,621,926	57,487,545	2,024,900
Securities Lending Income:				
Securities Lending Income	19,827,881	2,439,123	150,891	5,611
Less Securities Lending Expense	<u>(9,279,308)</u>	<u>(1,152,627)</u>	<u>(72,212)</u>	<u>(3,005)</u>
Net Securities Lending Income	10,548,573	1,286,496	78,679	2,606
Other Income	4,060,990	452,420	—	—
Total Additions	<u>8,695,434,808</u>	<u>1,553,638,123</u>	<u>107,351,725</u>	<u>13,891,282</u>
Deductions:				
Benefits	4,341,598,137	417,119,098	—	—
Death Benefits	4,684,598	—	—	—
Refunds of Contributions	15,961,744	—	—	—
Administrative Expense	43,546,184	9,481,014	1,288,059	285,895
Healthcare Premium Subsidies	<u>—</u>	<u>—</u>	<u>31,186,802</u>	<u>4,327,944</u>
Total Deductions	<u>4,405,790,663</u>	<u>426,600,112</u>	<u>32,474,861</u>	<u>4,613,839</u>
Net Increase (Decrease)	4,289,644,145	1,127,038,011	74,876,864	9,277,443
Net Position Restricted for Pension and Other Benefits				
Beginning of Year	62,082,059,102	7,239,871,924	436,902,738	15,018,483
End of Year	<u>\$ 66,371,703,247</u>	<u>\$ 8,366,909,935</u>	<u>\$ 511,779,602</u>	<u>\$ 24,295,926</u>

The accompanying notes are an integral part of the financial statements.

Deferred Compensation Plan	2017	2016
\$ -	\$ 1,083,850,526	\$ 1,032,887,129
121,701,967	740,157,232	687,951,210
<u>121,701,967</u>	<u>1,824,007,758</u>	<u>1,720,838,339</u>
182,190,732	7,851,696,985	(563,467,494)
9,314,014	1,691,876,626	1,597,920,012
<u>191,504,746</u>	<u>9,543,573,611</u>	<u>1,034,452,518</u>
(3,723,055)	(704,211,537)	(553,723,627)
<u>187,781,691</u>	<u>8,839,362,074</u>	<u>480,728,891</u>
4,070	22,427,576	18,262,638
(4,070)	(10,511,222)	(6,026,640)
<u>-</u>	<u>11,916,354</u>	<u>12,235,998</u>
1,259,787	5,773,197	5,101,431
<u>310,743,445</u>	<u>10,681,059,383</u>	<u>2,218,904,659</u>
97,089,531	4,855,806,766	4,639,283,147
-	4,684,598	9,925,146
-	15,961,744	13,154,578
1,330,947	55,932,099	51,763,886
-	35,514,746	38,285,515
<u>98,420,478</u>	<u>4,967,899,953</u>	<u>4,752,412,272</u>
212,322,967	5,713,159,430	(2,533,507,613)
1,557,787,164	71,331,639,411	73,865,147,024
<u>\$ 1,770,110,131</u>	<u>\$ 77,044,798,841</u>	<u>\$ 71,331,639,411</u>

Oregon Public Employees Retirement System

Statement of Net Position

Proprietary Fund

As of June 30, 2017, with Comparative Totals as of June 30, 2016

	<u>Enterprise Fund</u>	
	<u>Standard Retiree Health Insurance Account</u>	
	<u>2017</u>	<u>2016</u>
Assets:		
Current Assets		
Cash and Cash Equivalents	\$ 41,950,357	\$ 24,217,781
Reinsurance Reimbursements and Rebate Receivables	24,777,883	38,186,226
Due from Other Funds	-	1,217,146
Securities Lending Collateral	193,718	659,957
Total Current Assets	<u>66,921,958</u>	<u>64,281,110</u>
Total Assets	<u>66,921,958</u>	<u>64,281,110</u>
Deferred Outflow of Resources		
Pensions	<u>202,380</u>	<u>29,294</u>
Total Deferred Outflow of Resources	<u>202,380</u>	<u>29,294</u>
Liabilities:		
Current Liabilities		
Estimated Insurance Claims Due	8,700,000	9,200,000
Accrued Expenses	2,466,747	6,826,111
Due to Other Funds	61,340	84,295
Securities Lending Collateral Due Borrowers	193,718	659,957
Total Current Liabilities	<u>11,421,805</u>	<u>16,770,363</u>
Noncurrent Liabilities		
Other Liabilities	50,169	28,119
Net Pension Liability	<u>378,415</u>	<u>113,625</u>
Total Noncurrent Liabilities	<u>428,584</u>	<u>141,744</u>
Total Liabilities	<u>11,850,389</u>	<u>16,912,107</u>
Deferred Inflow of Resources		
Pensions	<u>3,596</u>	<u>27,665</u>
Total Deferred Inflow of Resources	<u>3,596</u>	<u>27,665</u>
Total Unrestricted Net Position	\$ <u>55,270,353</u>	\$ <u>47,370,632</u>

The accompanying notes are an integral part of the financial statements.

Statement of Revenues, Expenses, and Changes in Net Position

Proprietary Fund

For the Fiscal Year Ended June 30, 2017, with Comparative Totals for the Fiscal Year Ended June 30, 2016

	Enterprise Fund	
	Standard Retiree Health Insurance	
	2017	2016
Operating Revenues:		
Insurance Premium Revenue	\$ 128,962,823	\$ 168,655,173
Reinsurance Reimbursements	28,210,514	29,008,480
Total Operating Revenues	<u>157,173,337</u>	<u>197,663,653</u>
Operating Expenses:		
Claims Expense	133,600,670	184,612,618
Decrease in Estimated Liabilities	(500,000)	(5,598,000)
Administrative Expense	16,531,345	26,301,560
Total Operating Expenses	<u>149,632,015</u>	<u>205,316,178</u>
Operating Income/(Loss)	7,541,322	(7,652,525)
Non-Operating Revenues/(Expenses):		
Interest, Dividends and Other Investment Income	378,936	258,809
Transfers to Other State Funds	(20,537)	-
Securities Lending Income	953	7,374
Less Securities Lending Expense	(953)	(7,374)
Net Securities Lending Income	-	-
Total Non-Operating Revenues	<u>358,399</u>	<u>258,809</u>
Change in Unrestricted Net Position	7,899,721	(7,393,716)
Total Unrestricted Net Position		
Beginning of Year	<u>47,370,632</u>	<u>54,764,348</u>
End of Year	<u>\$ 55,270,353</u>	<u>\$ 47,370,632</u>

The accompanying notes are an integral part of the financial statements.

Oregon Public Employees Retirement System

Statement of Cash Flows

Proprietary Fund

For the Fiscal Year Ended June 30, 2017, with Comparative Totals for the Fiscal Year Ended June 30, 2016

	Enterprise Fund	
	Standard Retiree Health Insurance Account	
	2017	2016
Cash Flows from Operating Activities:		
Insurance Premiums and Reinsurance Reimbursements	\$ 171,798,826	\$ 178,976,596
Claims Paid	(133,600,670)	(184,612,618)
Other Payments	(20,823,979)	(22,596,384)
Net Cash Provided by/(Used for) Operating Activities	<u>17,374,177</u>	<u>(28,232,406)</u>
Cash Flows Used for Non Operating Activities:		
Transfers to Other State Funds	(20,537)	-
Cash Flows from Investing Activities:		
Interest and Dividends Received	378,936	258,809
Net Increase/(Decrease) in Cash and Cash Equivalents	17,732,576	(27,973,597)
Cash and Cash Equivalents Beginning of Year	<u>24,217,781</u>	<u>52,191,378</u>
Cash and Cash Equivalents End of Year	<u>\$ 41,950,357</u>	<u>\$ 24,217,781</u>
Reconciliation of Operating Income to Net Cash Provided by/(Used for) Operating Activities		
Operating Income/(Loss)	\$ 7,541,322	\$ (7,652,525)
Changes in assets, deferred inflows of resources, liabilities, and deferred outflows of resources:		
Reinsurance Reimbursements and Rebate Receivables	13,408,343	(17,469,911)
Due from Other Funds	1,217,146	(1,217,146)
Net Pension Liability	264,790	157,444
Deferred Outflows of Resources	(173,086)	(13,076)
Estimated Insurance Claims Due	(500,000)	(5,598,000)
Accrued Expenses	(4,359,364)	3,798,091
Due to Other Funds	(22,955)	(180,655)
Other Liabilities	22,050	260
Deferred Inflows of Resources	(24,069)	(56,888)
Net Cash Provided by/(Used for) Operating Activities	<u>\$ 17,374,177</u>	<u>\$ (28,232,406)</u>

The accompanying notes are an integral part of the financial statements.

Note 1 - Summary of Significant Accounting Policies

A. Reporting Entity

The Oregon State Treasurer has statutory responsibility for custody and investment of PERS assets. As a result of this fiduciary responsibility, the Oregon Public Employees Retirement System (PERS or the System) is included as part of the primary government in the *State of Oregon Comprehensive Annual Financial Report*.

B. Basis of Presentation

The accompanying financial statements are prepared on the basis of a fiscal year ended June 30, 2017, in accordance with Governmental Accounting Standards Board (GASB) Statements and generally accepted accounting principles that apply to governmental accounting for fiduciary funds and enterprise funds. Fiduciary funds are used to account for assets held by a governmental unit in a trustee capacity (trust funds). Enterprise funds may be used to report any activity for which a fee is charged to external users for goods or services.

PERS' pension, other postemployment benefit, and deferred compensation activities are accounted for in five pension and other postemployment benefit trust funds:

- Defined Benefit Pension Plan, a cost-sharing multiple-employer plan, which includes the Variable Annuity Account
- Oregon Public Service Retirement Plan – Individual Account Program
- Retirement Health Insurance Account, a cost-sharing multiple-employer plan
- Retiree Health Insurance Premium Account, a single-employer plan
- Deferred Compensation Fund (Oregon Savings Growth Plan).

PERS' public entity risk pool activity is accounted for in a single enterprise fund:

- Standard Retiree Health Insurance Account

C. Basis of Accounting

The accrual basis of accounting is used for all funds. Revenues are recognized when earned. Contributions are recognized when due, pursuant to legal (or statutory) requirements. Benefits and withdrawals are recognized when they are currently due and payable in accordance with the terms of the plans.

Proprietary funds distinguish operating revenues and expenses from non-operating items. Operating revenues

and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues are insurance premiums and reinsurance reimbursements, and operating expenses include claims and administrative expenses. All revenues and expenses not meeting this definition are reported as non-operating revenues and expenses. Deferred outflows of resources related to pensions resulting from contributions made subsequent to the measurement date will be recognized as a reduction of the net pension liability in the following year. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense for approximately each of the subsequent four years.

D. Budgetary Data

Only administrative expenses are subject to biennial legislative budget control. The Legislature exercises this control at the agency level. Any unobligated balance lapses at the end of each biennium.

Encumbrance accounting is allowed only during the biennium. All encumbrances lapse at the end of the biennium except capital construction, capital improvements, and disputed claims.

Budgetary accounting is not consistent with generally accepted accounting principles (GAAP) because the measurement focus is on decreases in financial resources rather than changes in net position.

E. Investments

Oregon Revised Statute (ORS) 293.706 established the Oregon Investment Council (OIC), which consists of five voting members. Four members of the council, who are qualified by training and experience in the field of investment or finance, are appointed by the governor subject to state Senate confirmation. The state treasurer serves as the council's remaining voting member. In addition, the executive director of the Public Employees Retirement System serves as a non-voting OIC member.

ORS 293.701 defines the investment funds over which OIC has responsibility. Included are the Oregon Public Employees Retirement Fund (OPERF), which is comprised of the Defined Benefit Pension Plan, the Individual Account Program, and the Other Postemployment Benefit plans, and the Deferred Compensation Fund. OIC establishes policies for the investment and reinvestment of moneys in the investment funds as well as the acquisition, retention, management, and disposition of investments in the investment funds. OIC is also responsible for providing an examination of the effectiveness of the investment program.

Oregon Public Employees Retirement System

OIC ensures moneys in the investment funds are invested and reinvested to achieve the investment objective of making the moneys as productive as possible. Furthermore, the investments of those funds are managed as a prudent investor would do under the prevailing circumstances and in light of the purposes, terms, distribution requirements, and laws governing each investment fund. This standard requires the exercise of reasonable care, skill, and caution and is applied to investments not in isolation, but in the context of each fund's portfolio as part of an overall investment strategy. The strategy should incorporate risk and return objectives reasonably suitable to the particular investment fund.

When implementing investment decisions, OIC has a duty to diversify the investments of the investment funds unless, under the circumstances, it is not prudent to do so. In addition, OIC must act with prudence when selecting agents and delegating authority.

Investments are recognized at fair value, the amount that could be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The fair value of publicly traded debt and equity securities in active markets is determined by the custodian's pricing agent using nationally recognized pricing services. The custodian's pricing agent values equity securities traded on a national or international exchange at the last reported sales price and generally values debt securities by using evaluated bid prices. For securities that do not have an active market, such as private placements or commingled investment vehicles, a market price is calculated by either the custodian's pricing agent or the investment manager. For example, a similar benchmark security may be used to derive the fair value. The benchmark will typically have a coupon rate and maturity date comparable to the debt security being valued, and its market risk will be similar, considering current market conditions. The fair value of real estate investment trust (REIT) securities is determined by the custodian's pricing agent using recognized pricing services.

Investments in real estate, other than publicly traded REITS, for which observable market prices in active markets do not exist, are reported at fair value as of June 30, 2017, as determined by management based on valuation information provided in good faith by the general partner. Direct investments in real estate are appraised every two to three years, and between appraisals, investment managers adjust values to reflect current and projected operating performance and financial transactions. In the absence of observable market prices, general partners determine the fair value of real estate partnerships using valuation methods considered most appropriate. A variety of factors are

considered, including the nature of the investment, local market conditions, trading values on public exchanges for comparable investments, current and projected operating performance, and financing transactions subsequent to the acquisition of the investment.

Investments in private equities are recorded at fair value as of June 30, 2017, as determined by management based on valuation information provided by the general partner. Investments in private equities representing publicly traded securities are stated at quoted market price. Where observable market inputs are not available, valuation models are applied. The general partner determines fair value based on the best information available and by reference to information including, but not limited to, the following: projected sales, net earnings, earnings before interest, taxes, depreciation and amortization, balance sheets, public and private transactions, valuations for publicly traded comparable companies, and/or other measures, and consideration of any other pertinent information including the types of securities held and the general partner's own assumptions regarding the investment. The methods used to determine the fair value of these investments typically include: (1) the market approach (whereby fair value is derived by reference to observable valuation measures for comparable companies or assets) and (2) the income approach (e.g., the discounted cash flow method).

Investments in the opportunity and alternatives portfolios are recorded at fair value as of June 30, 2017 by the respective general partner or account manager. Investments in the opportunity and alternatives portfolios representing publicly traded securities are stated at quoted market price. Where observable market inputs are not available, valuation models are applied. The general partner or account manager determines fair value based on the best information available and by reference to information including, but not limited to, the following: projected sales, net earnings, earnings before interest, taxes, depreciation, and amortization, balance sheets, public and private transactions, valuations for publicly traded comparable companies, and/or other measures, and consideration of any other pertinent information including the types of securities held and the general partner's own assumptions regarding the investment. The methods used to determine the fair value of these investments typically include: (1) the market approach (whereby fair value is derived by reference to observable valuation measures for comparable companies or assets); (2) the income approach (e.g. the discounted cash flow method).

Due to the inherent uncertainty and the degree of judgment involved in determining private equity, opportunity, real estate, and alternatives portfolio investment valuations, the fair values reflected in the accompanying

financial statements may differ significantly from values that would have been used had a readily determinable market value for the investments existed and the difference could be material. In addition, these investments are generally considered to be illiquid long-term investments, and the recorded fair values may materially differ from the amounts that eventually may be realized from the sale or other disposition of these investments.

OIC has approved the following asset classes for the OPERF: Short-Term Investments, Fixed Income, Real Estate, Public and Private Equities, and Alternative Investments. In addition, OPERF invests in the Opportunity Portfolio, which may be populated with investment approaches across a wide range of investment opportunities with no limitation as to asset classes or strategies. OIC must approve, in advance, the purchase of investments in a new asset class not described above.

Table 1 below displays the OIC approved asset allocation policy for fiscal years beginning in 2014. The previous allocation was amended to reduce debt securities and public equity holdings and to increase private equity, real estate and alternative equity holdings. See the Long-Term Expected Rate of Return table on page 69.

TABLE 1

Asset Class	Target Allocation
Cash	0.0%
Debt Securities	20.0%
Public Equity	37.5%
Private Equity	17.5%
Real Estate	12.5%
Alternative Equity	12.5%
Opportunity Portfolio	0.0%
Total	<u>100.0%</u>

See Geometric Return Table 34 on page 69

F. Earnings Crediting

By law earnings are credited to member accounts on a calendar-year basis. Members in Tier One are currently guaranteed to receive at least the assumed earnings rate used in the most recent actuarial valuation. Members participating in the Variable Annuity Account, IAP members, and Tier Two members are credited actual earnings or losses, less deductions allowed by law.

G. Administrative Costs

The System’s administrative expenses are funded from investment earnings and administrative fees collected from members and are allocated to all plans and programs administered by the System. If investment earnings

and fees are insufficient for such purpose, the remaining expenses are paid from employer contributions.

H. Use of Estimates in the Preparation of Financial Statements

The preparation of the System’s financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain financial statement amounts and disclosures. Actual results could differ from those estimates.

I. Comparative Totals

The basic financial statements include certain prior year summarized comparative information in total but not at the level of detail required for a presentation in conformity with the accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the System financial statements as of and for the fiscal year ended June 30, 2016, from which the summarized information was derived.

J. GASB Pronouncements

Adoption of New GASB Pronouncements

During the fiscal year ended June 30, 2017, PERS evaluated the following GASB Pronouncements:

GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans other than Pension Plans*, issued in June 2015. This Statement replaces Statements No. 43, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, as amended, and No. 57, *OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans*. It also includes requirements for defined contribution OPEB plans that replace the requirements for those OPEB plans in Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans*, as amended, Statement No. 43, and Statement No. 50, *Pension Disclosures*.

The objective of this Statement is to improve the usefulness of information about postemployment benefits other than pensions (other postemployment benefits or OPEB) included in the general purpose external financial reports of state and local governmental OPEB plans for making decisions and assessing accountability. GASB No. 74 requires disclosure and presentation of required supplementary information relating to the net OPEB liability of participating employers. The requirements of GASB No. 74 for OPEB plans are similar to the requirements of GASB No. 67 for pension plans.

Oregon Public Employees Retirement System

This Statement was effective for the fiscal year ended June 30, 2017. PERS implemented this new pronouncement in the current year.

GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, was issued June 2015. This Statement replaces the requirements of Statements No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, as amended, and No. 57, *OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans*, for OPEB.

The primary objective of this Statement is to improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions (other postemployment benefits or OPEB).

This Statement is effective for fiscal year ending June 30, 2018. Earlier application is encouraged. PERS will implement this pronouncement effective June 30, 2018.

Note 2 - Description of Plan

A. Organization

PERS administers a cost-sharing, multiple-employer defined benefit pension plan for units of state government, political subdivisions, community colleges, and school districts, containing multiple actuarial pools. Plan assets may be used to pay the benefits of the employees of any employer that provides pensions through the Plan. Participation by state government units, school districts, and community colleges is mandatory. Participation by most political subdivisions is optional but irrevocable if elected. As of June 30, 2017, there were 904 participating employers.

PERS is administered in accordance with Oregon Revised Statutes (ORS) Chapter 238, Chapter 238A, and Internal Revenue Code Section 401(a). The Oregon Legislature has delegated authority to the Public Employees Retirement Board (Board) to administer and manage the System. All members of the Board are appointed by the Governor and confirmed by the Senate. The Governor designates the chairperson. One member must be a public employer manager or a local elected official, one member must be a union-represented public employee or retiree, and three members must have experience in business management, pension management, or investing.

B. Plan Membership

Employer, retiree, active and inactive member data as of June 30, 2017, is shown in Table 2 on the next page.

The 1995 Legislature enacted Chapter 654, Section 3,

Oregon Laws 1995, which has been codified into ORS 238.435. This legislation created a second tier of benefits for those who established membership on or after January 1, 1996. The second tier does not have the Tier One assumed earnings rate guarantee and has a higher normal retirement age of 60, compared to age 58 for Tier One. As of June 30, 2017, there were 24,528 active plan members, 125,344 retired plan members or their beneficiaries currently receiving benefits, 14,037 inactive plan members entitled to but not yet receiving benefits, for a total of 163,909 Tier One members. For Tier Two members, as of June 30, 2017, there were 37,097 active plan members, 12,234 retired plan members or their beneficiaries currently receiving benefits, 15,692 inactive plan members entitled to but not yet receiving benefits, for a total of 65,023.

The 2003 Legislature enacted HB 2020, codified as ORS 238A, which created the Oregon Public Service Retirement Plan (OPSRP). OPSRP consists of the Pension Program and the Individual Account Program. Membership includes public employees hired on or after August 29, 2003. As of June 30, 2017, there were 111,680 active plan members, 3,437 retired plan members or their beneficiaries currently receiving benefits, 4,215 inactive plan members entitled to but not yet receiving benefits, and 11,765 inactive plan members not eligible for refund or retirement, for a total of 131,097 OPSRP Pension Program members.

Beginning January 1, 2004, PERS active Tier One and Tier Two members became members of the Individual Account Program (IAP) of OPSRP. PERS members retain their existing Regular or Variable accounts, but member contributions are now deposited into the member's IAP account. Accounts are credited with earnings and losses net of administrative expenses. OPSRP is part of PERS and is administered by the Board. The PERS Board is directed to adopt any rules necessary to administer OPSRP, and such rules are to be considered part of the plan for IRS purposes.

C. Plan Benefits

a. PERS Pension (Chapter 238)

1. Pension Benefits

The PERS retirement allowance is payable monthly for life. Member may select from 13 retirement benefit options that are actuarially equivalent to the base benefit.

These options include survivorship benefits and lump-sum refunds. The basic benefit is based on years of service and final average salary. A percentage (2.0 percent for Police and Fire employees, 1.67 percent for General Service employees) is multiplied by the number of years of service and the final average salary. Benefits may also be

TABLE 2

Plan Membership as of June 30, 2017	Employers	Defined Benefit Plan				Post-Employment Healthcare	
		Tier 1	Tier 2	OPSRP	Total	RHIA	RHIPA
Employers							
State Agencies	109						
School Districts	294						
Political Subdivisions	484						
Community Colleges	17						
Total Employers	904						
Inactive Members - General Service							
Retirees and beneficiaries currently receiving benefits		112,802	11,168	3,250	127,220	42,244	1,132
Alternate Payees currently receiving benefits		2,295	58	5	2,358	n/a	n/a
Inactive Members - General Service Receiving Benefits		115,097	11,226	3,255	129,578	42,244	1,132
Inactive members eligible for, but not yet receiving benefits		9,447	6,651	4,062	20,160	15,657	n/a
Inactive members eligible for refund value of account only		4,086	8,354	n/a ¹	12,440	n/a	n/a
Inactive members not eligible for refund or retirement		0	0	11,245	11,245	n/a	n/a
Inactive Members - General Service Not Receiving Benefits		13,533	15,005	15,307	43,845	15,657	-
Total Inactive Members - General Service		128,630	26,231	18,562	173,423	57,901	1,132
Inactive Members - Police and Fire							
Retirees and beneficiaries currently receiving benefits		9,730	998	182	10,910	2,525	120
Alternate Payees currently receiving benefits		517	10	0	527	n/a	n/a
Inactive Members - Fire and Police Receiving Benefits		10,247	1,008	182	11,437	2,525	120
Inactive members eligible for, but not yet receiving benefits		359	317	153	829	712	n/a
Inactive members eligible for refund value of account only		145	370	n/a ¹	515	n/a	n/a
Inactive members not eligible for refund or retirement		0	0	520	520	n/a	n/a
Inactive Members - Fire and Police Not Receiving Benefits		504	687	673	1,864	712	-
Total Inactive Members - Fire and Police		10,751	1,695	855	13,301	3,237	120
Active Members - General Service							
State Agencies		6,245	8,010	27,915	42,170	14,144	14,015
School Districts		9,527	15,040	44,855	69,422	24,387	n/a
Political Subdivisions		5,494	8,117	24,917	38,528	13,513	n/a
Community Colleges		978	1,613	5,451	8,042	2,573	n/a
Total Active Members - General Service		22,244	32,780	103,138	158,162	54,617	14,015
Active Members - Police and Fire							
State Agencies		798	1,732	3,399	5,929	2,525	2,467
School Districts		15	27	46	88	41	n/a
Political Subdivisions		1,470	2,552	5,083	9,105	4,018	n/a
Community Colleges		1	6	14	21	7	n/a
Total Active Members - Fire and Police		2,284	4,317	8,542	15,143	6,591	2,467

¹ Defined benefit only. No individual accounts are maintained.

calculated under a formula plus annuity (for members who were contributing before August 21, 1981) or a money match computation if a greater benefit results. Monthly payments must be a minimum of \$200 per month or the member will receive a lump-sum payment of the actuarial equivalence of benefits to which he or she is entitled.

Police and Fire members may purchase increased benefits that are payable between the date of retirement and age 65.

A member is considered vested and will be eligible at minimum retirement age for a service retirement allow-

ance if he or she has had a contribution in each of five calendar years or has reached at least 50 years of age before ceasing employment with a participating employer (age 45 for Police and Fire members). General Service employees may retire after reaching age 55. Police and Fire members are eligible after reaching age 50. Tier One General Service employee benefits are reduced if retirement occurs prior to age 58 with fewer than 30 years of service. Police and Fire member benefits are reduced if retirement occurs prior to age 55 with fewer than 25 years of service. Tier Two members are eligible for full benefits at age 60. The plans are closed to new members hired on or after August 29, 2003.

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A judge member who has made contributions to PERS during each of five calendar years shall receive a retirement allowance, payable monthly, for life. Before reaching age 60, judge members must choose the calculation formula under which they will retire. The election is irrevocable after the member attains age 60. The two formulas, A and B, are described in the following paragraph.

The Plan A retirement allowance for judge members is computed by multiplying 2.8125 percent by the final average salary for the first 16 years of service and 1.67 percent of the final average salary multiplied by the number of years of service as a judge in excess of 16. For most judge members the maximum amount is limited to 65 percent of final average salary. The Plan B retirement allowance for judge members is computed by multiplying 3.75 percent by the final average salary for the first 16 years of service and 2.0 percent of the final average salary multiplied by the number of years of service as a judge in excess of 16 years of service. For most judge members the maximum amount is limited to 75 percent of final average salary. Plan B requires a judge to serve up to 35 days per year for a period of five years as a pro tem judge. There is no actuarial reduction for retirement before age 65.

2. Death Benefits

Upon the death of a non-retired member, the beneficiary receives a lump-sum refund of the member's account balance (accumulated contributions and interest). In addition, the beneficiary will receive a lump-sum payment from employer funds equal to the account balance, provided one or more of the following conditions are met:

- the member was employed by a PERS employer at the time of death,
- the member died within 120 days after termination of PERS-covered employment,
- the member died as a result of injury sustained while employed in a PERS-covered job, or
- the member was on an official leave of absence from a PERS-covered job at the time of death.

A member's beneficiary may choose a monthly payment for life instead of the lump-sum or a combination of lump-sum and monthly payments, if eligible. The monthly payment must be a minimum of \$30 per month for deaths that occur July 30, 2003, and earlier; \$200 per month for deaths that occur after July 30, 2003.

3. Disability Benefits

A member with 10 or more years of creditable service who becomes disabled from other than duty-connected causes may receive a non-duty disability benefit. A disability resulting from a job-incurred injury or illness quali-

fies a member (including PERS judge members) for disability benefits regardless of the length of PERS-covered service. Upon qualifying for either a non-duty or duty disability, service time is computed to age 58 (55 for Police and Fire members) when determining the monthly benefit.

Judge members of PERS who have served a minimum of six consecutive years and who become physically or mentally incapacitated are entitled to benefits as provided in ORS 238.555.

4. Benefit Changes After Retirement

Members may choose to continue participation in their Variable Account after retiring and may experience annual benefit fluctuations due to changes in the market value of the underlying global equity investments of that account.

Under ORS 238.360 monthly benefits are adjusted annually through cost-of-living changes (COLA). The COLA is capped at 2.0 percent.

b. OPSRP Pension Program

1. Pension Benefits

This portion of OPSRP provides a life pension funded by employer contributions. Benefits are calculated with the following formula for members who attain normal retirement age:

Police and Fire: 1.8 percent is multiplied by the number of years of service and the final average salary. Normal retirement age for Police and Fire members is age 60 or age 53 with 25 years of retirement credit. To be classified as a Police and Fire member, the individual must have been employed continuously as a Police and Fire member for at least five years immediately preceding retirement.

General Service: 1.5 percent is multiplied by the number of years of service and the final average salary. Normal retirement age for General Service members is age 65, or age 58 with 30 years of retirement credit.

A member of the pension program becomes vested on the earliest of the following dates: the date the member completes 600 hours of service in each of five calendar years, the date the member reaches normal retirement age, and, if the pension program is terminated, the date on which termination becomes effective.

2. Death Benefits

Upon the death of a non-retired member, the spouse or other person who is constitutionally required to be treated in the same manner as the spouse receives for life 50 percent of the pension that would otherwise have been paid to

the deceased member. The surviving spouse or other person may elect to delay payment of the death benefit, but payment must commence no later than December 31 of the calendar year in which the member would have reached 70½ years.

3. Disability Benefits

A member who has accrued 10 or more years of retirement credits before the member becomes disabled or a member who becomes disabled due to job-related injury shall receive a disability benefit of 45 percent of the member’s salary determined as of the last full month of employment before the disability occurred.

c. Individual Account Program

1. Benefits Terms

An IAP member becomes vested on the date the employee account is established or on the date the rollover account was established. If the employer makes optional employer contributions for a member, the member becomes vested on the earliest of the following dates: the date the member completes 600 hours of service in each of five calendar years, the date the member reaches normal retirement age, the date the IAP is terminated, the date the active member becomes disabled, or the date the active member dies. The accounts fall under Internal Revenue Code Section 401(a).

Upon retirement, a member of the IAP may receive the amounts in his or her employee account, rollover account, and vested employer account as a lump-sum payment or in equal installments over a 5-, 10-, 15-, 20-year period or an anticipated life span option. Installment amounts vary with market returns as the account

remains invested while in distribution. When chosen, the distribution option must result in a \$200 minimum distribution amount, or the frequency of the installments will be adjusted to reach that minimum.

2. Death Benefits

Upon the death of a non-retired member, the beneficiary receives in a lump sum the member’s account balance, rollover account balance, and vested employer optional contribution account balance. If a retired member dies before the installment payments are completed, the beneficiary may receive the remaining installment payments or choose a lump-sum payment.

3. Recordkeeping

PERS contracts with Voya Financial to maintain IAP participant records.

d. Other Postemployment Healthcare Benefits

ORS 238.420 established the Retirement Health Insurance Account (RHIA) and authorizes a payment of up to \$60 from RHIA toward the monthly cost of health insurance for eligible PERS members. RHIA is a cost-sharing multiple-employer OPEB plan for 904 participating employers. The plan was closed to new entrants hired on or after August 29, 2003.

To be eligible to receive this monthly payment toward the premium cost the member must: (1) have eight years or more of qualifying service in PERS at the time of retirement or receive a disability allowance as if the member had eight years or more of creditable service in PERS, (2) receive both Medicare Parts A and B coverage, and (3) enroll in a PERS-sponsored health plan.

TABLE 3

Contribution Rate Summary ¹	Defined Benefit Pension						Postemployment Healthcare		
	PERS Defined Benefit Plan			OPSRP Pension Program			RHIA	RHIPA	
	Pooled Employers			Non-Pooled Employers		All Employers		All Employers	State Agencies
	State Agencies ²	State and Local Government Rate Pool ³	School Pool ³	Political Subdivisions ^{3,4}	Judiciary	General Service	Police and Fire		
Employee IAP	6.00 %	6.00 %	6.00 %	6.00 %	6.00 %	6.00 %	6.00 %	0.00 %	0.00 %
Employee Normal Cost	0.00	0.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00
Employer Normal Cost	13.66	13.66	11.94	14.24	14.99	7.33	11.44	0.08	0.09
Unfunded Actuarial Liability	(1.43)	4.57	9.25	3.27	(0.93)	0.61	0.61	0.45	0.35
Total Employer Contributions	12.23 %	18.23 %	21.19 %	17.51 %	14.06 %	7.94 %	12.05 %	0.53 %	0.44 %

¹Group average rates shown were effective July 1, 2015 through June 30, 2017.
²A subcomponent of the State and Local Government Rate Pool; includes UAL payment rate offset.
³Does not include UAL payment rate offsets.
⁴Non-pooled Political Subdivisions are valued separately for the Defined Benefit Plan.

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A surviving spouse or dependent of a deceased PERS retiree who was eligible to receive the subsidy is eligible to receive the subsidy if he or she (1) is receiving a retirement benefit or allowance from PERS or (2) was insured at the time the member died and the member retired before May 1, 1991.

For the year ended June 30, 2017, PERS employers contributed 0.08 percent of PERS-covered salaries for Tier One and Tier Two members to fund the normal cost portion of RHIA benefits. PERS employers contributed 0.45 percent of all PERS-covered salaries to amortize the unfunded actuarial accrued liability over a fixed period with new unfunded actuarial accrued liabilities being amortized over 20 years. These rates were based on the December 31, 2013 actuarial valuation. This is included in the employer contribution rates listed in Table 3 on the previous page.

Employer contributions are advance-funded on an actuarially determined basis. There is no inflation assumption for RHIA postemployment benefits because the payment amount is set by statute and is not adjusted for increases in healthcare costs. The number of active plan RHIA participants receiving benefits was 44,769 for the fiscal year ended June 30, 2017, and there were 61,208 active and 16,369 inactive members who meet the requirements to receive RHIA benefits when they retire.

ORS 238.415 established the Retiree Health Insurance Premium Account (RHIPA) and requires the Board on or before January 1 of each year to calculate the average difference between the health insurance premiums paid by retired state employees under contracts entered into by the Board and health insurance premiums paid by active state employees. ORS 238.415 authorizes payment of this average difference to qualified retired state employees. Retired state employees are qualified to receive this benefit if they had eight or more years of qualifying service with a state agency in the System at the time of retirement or are receiving a disability pension calculated as if they had eight or more years of qualifying service but are not eligible for federal Medicare coverage. RHIPA is a single-employer (the state as one employer) defined benefit OPEB plan and was closed to new entrants hired on or after August 29, 2003.

A surviving spouse or dependent of a deceased retired state employee is eligible to receive the subsidy if he or she (1) is receiving a retirement benefit or allowance from PERS or (2) was insured at the time the member died, and the member retired on or after September 29, 1991.

For the year ended June 30, 2017, state agencies contributed 0.09 percent of PERS-covered salaries for Tier One and Tier Two members to fund the normal cost por-

tion of RHIPA benefits. State agencies contributed 0.35 percent of all PERS-covered salaries to amortize the unfunded actuarial accrued liability over a fixed period with new unfunded actuarial accrued liabilities being amortized over 20 years. These rates were based on the December 31, 2013 actuarial valuation. This is included in the employer contribution rates listed in Table 3 on the previous page.

The number of active plan RHIPA participants receiving benefits was 1,252 for the fiscal year ended June 30, 2017. As of June 30, 2017, there were 16,482 active members who meet the requirements to receive RHIPA benefits when they retire. Inactive members are not eligible for these benefits. All subsidy payments from the RHIA and RHIPA are initially deposited in the Standard Retiree Health Insurance Account, as described on page 63, and subsequently remitted to the appropriate PERS health plan.

e. Deferred Compensation Plan

Deferred compensation plans are authorized under Internal Revenue Code Section 457. The Oregon Legislature enacted Chapter 179, Oregon Laws 1997 that established the Deferred Compensation Fund. ORS 243.400 to 243.507 established and provided for PERS to administer the state deferred compensation plan, known as the Oregon Savings Growth Plan (OSGP). As of June 30, 2017, the fair value of investments was \$1,706.3 million.

The plan is a benefit available to all state employees. To participate, an employee executes an individual agreement with the state deferring current earnings to be paid at a future date. Participants in the plan are not required to pay federal and state income taxes on the deferred contributions and earnings until the funds are received. Participants or their beneficiaries cannot receive the funds until at least one of the following occurs: termination by reason of resignation, death, disability, or retirement; unforeseeable emergency; or by requesting a *de minimis* distribution from inactive accounts valued less than \$5,000. A loan program is also available for eligible participants. Member loans receivable at June 30, 2017, totaled \$11.9 million. Of that amount, \$9.5 million is not expected to be collected within one year.

PERS contracts with Voya Financial to maintain OSGP participant records. The Oregon State Treasury, as custodian of the assets, also contracts with State Street Bank and Trust Company to provide financial services. There are 21 investment options with varying degrees of market risk. Up to five financial institutions provide investment services in mutual funds for each investment option. A participant receives a blend of these mutual funds within the investment option. Participants direct the

selection of investment options and also bear any market risk. The Oregon State Treasury has no liability for losses under the plan but does have the prudent investor responsibility of due care. Total membership as of June 30, 2017, was 24,198.

PERS may assess a charge to the participants not to exceed 2.0 percent on amounts deferred, both contributions and investment earnings, to cover costs incurred for administering the program. Actual charges to participants, including investment charges, for the year ended June 30, 2017, averaged 0.22 percent of amounts deferred.

Oregon Revised Statute 243.505 established a Deferred Compensation Advisory Committee to provide input to the PERS Board. This committee is composed of seven members who meet at least quarterly.

f. Standard Retiree Health Insurance Account

ORS 238.410 established the Standard Retiree Health Insurance Account (SRHIA), a public entity risk pool. SRHIA is both a risk sharing and insurance purchasing pool. The Board contracts for medical and hospital insurance on behalf of retired members. Members and their dependents are eligible for PERS healthcare coverage if the member is receiving a retirement allowance or benefit under the System. A surviving spouse or dependent of a PERS retiree is eligible to participate if he or she was covered under the health plan at the time of the retiree's death. As of June 30, 2017, there are 59,664 retirees and their dependents participating in the health insurance program.

PERS has contracted with various carriers on an insurance purchasing basis and remits premiums collected from participating members to the carriers on a monthly basis. PERS has contracted with Moda Health for claims payment services for a minimum premium funding plan and also remits premiums monthly for stop-loss coverage. SRHIA is ultimately at risk for all amounts collected and on deposit with Moda Health and other health insurance service providers, which totaled approximately \$17.2 million as of June 30, 2017. Moda Health becomes responsible for claims in excess of \$200,000 per year per individual and all claims in excess of contractually required reserves on deposit with Moda Health.

In fiscal year 2017, SRHIA recognized Reinsurance Reimbursement and Rebate receivables of approximately \$24.8 million. These receivables were primarily comprised of \$19.7 million in reinsurance settlements, \$2.2 million in outstanding drug rebates, and \$2.9 million in coverage gap discounts, which reflect changes in the prior year estimated receivables. The System, through MODA Health, provides a custom Medicare Part D prescription

drug plan known as an Employer Group Waiver Plan (EGWP). EGWP subsidies can include direct subsidies, low income cost sharing subsidies, low income premium subsidies, reinsurance subsidies, and coverage gap discounts. Reinsurance subsidies are reported as operating revenues; coverage gap discounts along with pharmacy rebates are reported as an offset to claims expense.

The current estimate of Incurred But Not Reported (IBNR) insurance claims is \$8.7 million.

D. Contributions

PERS' funding policy provides for periodic member and employer contributions at rates established by the Board, subject to limits set in statute. The rates established for member and employer contributions were approved based on the recommendations of the System's third-party actuary.

a. Member Contributions

Beginning January 1, 2004, all member contributions, except for contributions by judge members, were placed in the OPSRP Individual Account Program (IAP). Prior to that date, all member contributions were credited to the Defined Benefit Pension Plan. Member contributions are set by statute at 6.0 to 7.0 percent of salary and are remitted by participating employers, who may agree to make member contributions on the member's behalf. The contributions are either deducted from member salaries or paid by the employers. The Member Reserve, described in Note 7.A., represents accumulated member contributions and earnings allocations made prior to January 1, 2004, and subsequent earnings allocations less refunds and amounts transferred to reserves for retirements and disabilities. The IAP member accounts represent member contributions made on or after January 1, 2004, plus earnings allocations less disbursements for refunds, death benefits, and retirements.

b. Employer Contributions

PERS funding policy provides for monthly employer contributions at actuarially determined rates. These contributions, expressed as a percentage of covered payroll, are intended to accumulate sufficient assets to pay benefits when due. This funding policy applies to the PERS Defined Benefit Plan and the Other Postemployment Benefit Plans.

Employer contribution rates during the period were based on the December 31, 2013 actuarial valuation, which became effective July 1, 2015. The state of Oregon and certain schools, community colleges, and political subdivisions have made unfunded actuarial liability payments, and their rates have been reduced. See the contribution rate summary provided in Table 3 on page 43.

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1. PERS Defined Benefit Plan Contributions (ORS 238)

Pension rates for the State and Local Government Rate Pool were 18.23 percent, schools 21.19 percent, and judiciary 14.06 percent of PERS-covered salaries, effective July 1, 2015. Political subdivisions that have not joined the State and Local Government Pool had an average pension rate of 17.51 percent.

Oregon Laws 2001, Chapter 945, Section 13 authorized the establishment of the State and Local Government Rate Pool. Local political subdivisions were given the option to join the state of Oregon and community colleges for the actuarial purpose of calculating employer rates. Participation by local political subdivisions in this pool was effective for the actuarial valuation period beginning January 1, 2002.

Based on the actuarial valuation as of December 31, 2013, the state agencies and political subdivisions had increases in employer contribution rates on July 1, 2015, while employer contribution rates for schools and the judiciary slightly decreased. These rate changes are measured against the actual average rates paid since July 1, 2013. The Board practice is to implement new employer contribution rates July 1 of each odd-numbered year based on the valuation of the previous odd-numbered year.

2. OPSRP Pension Program Contributions (ORS 238A)

PERS employers participating in the OPSRP Pension Program participate in the same rate sharing pool and therefore share the same contribution rate. The OPSRP Pension Program employer rates effective July 1, 2015, through June 30, 2017, were 7.94 percent of covered salaries for general service employees and 12.05 percent of covered salaries for police and fire employees. These rates increased from 6.42 percent of covered salaries for general service and 9.15 percent of covered salaries for police and fire employees for the period July 1, 2013, through June 30, 2015. Each of these rates includes a component related to disability benefits for general service and police and fire members.

Note 3 – Receivables and Payables

A. Receivables

Table 4 disaggregates receivable balances reported in the Statements of Fiduciary Net Position as Investment Sales and Other Receivables.

The Strunk and Eugene Accrual resulted from recalculating benefits for recipients who received overpay-

ments based on the reallocation of 1999 earnings. Approximately 80.2 percent of these receivables, or \$41.0 million, is expected to be collected after June 30, 2017.

Additionally, there were \$24.8 million in Reinsurance Reimbursements and Rebate receivables reported in the Statement of Net Position – Proprietary Fund.

TABLE 4

<u>Accounts Receivable</u>	<u>June 30, 2017</u>
Broker Receivable	\$ 1,617,921,352
Strunk and Eugene Accrual	41,036,265
Overpaid Benefits	102,401
Other	5,555,685
Total Accounts Receivable	\$ <u>1,664,615,703</u>

B. Payables

Table 5 below disaggregates payable balances reported in the Statements of Fiduciary Net Position as Investment Purchases and Accrued Expenses.

TABLE 5

<u>Accounts Payable</u>	<u>June 30, 2017</u>
Broker Payable	\$ 2,758,849,058
Pension Roll	355,470,050
Investment Fees	85,734,326
Death Benefits	20,756,106
Compensated Absences	1,816,391
Services and Supplies	1,404,676
Other	7,180,575
Total Accounts Payable	\$ <u>3,231,211,182</u>

Note 4 - Investments

The Oregon State Treasury is the investment officer for the state of Oregon. Investment standards are established in ORS 293.726 and require funds to be managed as a prudent investor would do. The Oregon Investment Council (OIC) establishes policies for the investment and reinvestment of moneys in the Oregon Public Employees Retirement Fund. Policies are established based on the primary investment asset class of each investment manager and do not reflect the classifications of individual holdings as presented in the financial statements. Contracts with individual investment managers provide additional guidelines that vary from manager to manager.

A. Deposits

PERS cash and cash equivalents consist of cash on hand, deposits in the Oregon Short Term Fund (OSTF), moneys held by external investment managers, and cash equivalents held by the health insurance provider. OSTF is a cash and investment pool that operates as a demand deposit account and is required for use by all state funds. See Table 6 below.

TABLE 6

Depository Account	Bank Balance
Insured	\$ 500,000
Oregon Short Term Fund	1,038,542,049
Health Insurance Claims Fund	16,952,053
Uninsured and uncollateralized	1,921,445,992
Total deposits	\$ 2,977,440,094

OSTF is separately audited by the Oregon Audits Division. The audited financial statements can be viewed at <http://sos.oregon.gov/audits/Documents/2017-19.pdf>. OSTF investment risks are addressed in the notes to those financial statements.

Health Insurance Claims Fund of \$17.2 million was held at US Bank. The account is identified as Public Funds, therefore, any amount in the account above Federal Deposit Insurance Corporation (FDIC) was insured by Public Funds Collateralization Program.

1. Custodial Credit Risk

Custodial credit risk for deposits is the risk that in the event of a bank failure, PERS' deposits may not be recovered.

As noted above, the deposit and investment risks, including custodial risk, of the OSTF are outlined in the OSTF financial statements. As of June 30, 2017, the carrying amount of PERS' deposits in OSTF totaled \$1,311.6 million, and the corresponding bank balance was \$1,038.5 million.

Investment managers' deposits with custodian banks consist of cash and cash equivalents that represent buying reserves. As of June 30, 2017, there was \$1,921.7 million on deposit for the accounts of the OPERF investment managers.

2. Foreign Currency Risk

Foreign currency risk for deposits is the risk that changes in exchange rates will adversely affect the fair value of the deposits. Foreign currency risk is controlled via contrac-

tual agreements with the investment managers. As of June 30, 2017, \$66.0 million in cash and cash equivalents was exposed to foreign currency risk. The U.S. dollar balances of these deposits, organized by currency denomination, are presented in Table 12 on page 54.

3. Restricted Cash Equivalents

PERS' cash and cash equivalents at June 30, 2017, include collateral of \$29.6 million held by investment managers. Swap collateral is offset by a related liability with a net settlement feature. Collateral is restricted and is not available to pay current liabilities.

B. Investments

Table 7 on the next page presents the fair value of investments held by the state of Oregon for PERS as of June 30, 2017.

1. Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Observable inputs are developed based on market data obtained from sources independent of the reporting entity. Unobservable inputs are developed based on the best information available about the assumptions market participants would use in pricing the asset.

The classification of securities within the fair value hierarchy is based upon the activity level in the market for the security type and the inputs used to determine their fair value. The three levels of the hierarchy are described below:

Level 1 – Unadjusted quoted prices for identical instruments in active markets.

Level 2 – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.

Level 3 – Valuations derived from valuation techniques in which significant inputs are unobservable.

Inputs used to measure fair value might fall in different levels of the fair value hierarchy. Categorization within the hierarchy is based on the lowest level input that is significant to the fair value measurement.

Debt securities classified as level 2, including invested securities lending collateral, are valued using the latest bid prices or evaluated quotes from independent pricing vendors. The third-party vendors use a variety of methods

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TABLE 7

Investments as of June 30, 2017	Fair Value
US Treasury Obligations	\$ 6,659,894,035
US Treasury Obligations - Strips	41,009,528
US Treasury Obligations - TIPS	143,879,524
US Federal Agency Mortgage Securities	797,272,911
US Federal Agency Mortgage TBAs	743,219,289
US Federal Agency Debt	165,603,636
US Federal Agency Strips	35,777,340
International Debt Securities	910,637,728
Non-Government Debt Securities	182,475,856
Corporate Bonds	1,979,160,522
Bank Loans	1,249,320,725
Municipal Bonds	28,201,844
Collateralized Mortgage Obligations	860,759,568
Asset-Backed Securities	357,512,116
Guaranteed Investment Contracts ¹	178,535,884
Domestic Fixed Income Funds	598,796,147
International Fixed Income Funds	36,483,217
Total Debt Securities	14,968,539,870
Derivatives in Asset Positions	23,282,863
Domestic Equity Securities	13,267,869,276
International Equity Securities	11,679,899,999
Domestic Equity Funds	1,286,567,504
Global Equity Funds	2,101,105,870
International Equity Funds	1,323,753,702
Target Date Fund	535,869,075
Oregon Savings Growth Plan - Self Directed	7,521,864
Total Public Equity	30,225,870,153
Real Estate and Real Estate Investment Trusts	8,718,684,190
Private Equity	15,017,344,594
Alternative Equity	4,138,735,188
Opportunity Portfolio	1,587,753,762
Total PERS Investments - Fiduciary Funds	\$ 74,656,927,757

¹Guaranteed Investment Contracts are stated at contract value.

when pricing these securities that incorporate relevant observable market data to arrive at an estimate of what a buyer in the marketplace would pay for a security under current market conditions. When independent price sources are not available, debt securities are priced based on the last traded price or a valuation provided by the investment manager and are categorized in level 3.

Equity securities are generally valued based on quoted prices from an active market and are therefore categorized in level 1. In the absence of quoted market prices, such as equity securities that trade infrequently or not at all, valuations are based on the last traded price or a price provided by investment managers and are generally categorized in level 3.

Funds priced using a net asset value (NAV) that is published daily and validated with a sufficient level of

observable activity are categorized in level 1. If observable activity is limited, yet supports that the NAV represents an exit value of the security at the measurement date, the securities are categorized in level 2. Investments in nongovernmental entities that are measured at NAV as a practical expedient, such as most private equity, alternative, opportunity, and real estate investments, are excluded from the fair value hierarchy if the NAV per share (or its equivalent) were calculated in a manner consistent with the Financial Accounting Standards Board's measurement principles for investment companies. Funds not meeting this criteria are categorized in level 3.

Exchange-traded derivatives, including futures, rights and warrants, that are actively traded are valued using quoted prices are categorized in level 1. Derivative contract valuations, such as swaps and options, are modeled using observable pricing inputs and techniques that do not entail material subjectivity and are therefore categorized in level 2. Level 3 derivatives include securities valued at a price that has been determined by the investment manager's valuation committee.

Investments in real estate, other than real estate investment trusts which are generally valued based on an active market price and are categorized in level 1, have been valued based on the NAV per share (or its equivalent), as provided by the general partner. This type includes 64 commingled real estate funds, structured as limited partnerships, where the funds have a finite term. Distributions from the funds will be received as the underlying investments of the funds are liquidated. Liquidation is expected to take place during the five year period following the termination of the investment period which extends to 2035. Investments in real estate also include 14 joint ventures where the investments are expected to be held for the long-term and generate cash flow that will represent a significant component of the total return. Real estate also includes investments in 3 open ended funds that permit quarterly redemption of shares, subject to certain requirements being met.

Private Equity consists of approximately 246 funds, organized as limited partnerships and limited liability companies, participating in diversified strategies including leveraged-buyouts, venture capital, growth equity, fund-of-funds, co-investments and special situations. The fair values of the private equity investments have been determined using the NAV per share (or its equivalent) as provided by the general partner or managing member. These funds have a finite term. Distributions will be received as the underlying investments of the funds are liquidated, which is expected to occur over the next 12 to 14 years.

Alternative Equity investments seek to provide diversification and inflation hedging characteristics to the Fund and include investments with a focus on infrastructure and natural resources. Alternative Equity consists of 38 investments in commingled funds organized as limited partnerships and limited liability companies. The fair values of the investments have been determined using a NAV per share (or its equivalent) of the investments. For alternative real assets, which includes 35 of the 38 funds, the funds have a finite term. Distributions will be received as the underlying investments of the funds are liquidated, which is expected to occur over the next 7 to 14 years. Alternative diversifying strategies permit periodic redemption of shares, subject to certain requirements being met, and consist of two funds investing in diversifying

hedge fund strategies and one direct investment in a holding company.

The Opportunity Portfolio includes strategies that fall outside of other asset classes and include 16 funds investing in a broad range of performing and distressed debt and debt related securities as well as royalties and insurance-based investments. The fair values of the investments have been determined using a NAV per share (or its equivalent) of the investments. For 11 of the 16 funds, the funds have a finite term. Distributions will be received as the underlying investments of the funds are liquidated, which is expected to occur over the next 6 to 10 years. The remaining five funds are open ended, permitting periodic redemption of shares.

TABLE 8

	6/30/2017	Fair Value Measurements Using		
		Quoted Prices in	Significant Other	Significant
		Active Markets for	Observable Inputs	Unobservable
		Identical Assets	(Level 2)	Inputs
		(Level 1)		(Level 3)
Investments and Derivative Instruments Measured at Fair Value				
Investments by Fair Value Level				
Debt Securities				
US Treasury Obligations	\$ 6,659,894,035	\$ -	\$ 6,659,894,035	\$ -
US Treasury Obligations - Strips	41,009,528	-	41,009,528	-
US Treasury Obligations - TIPS	143,879,524	-	143,879,524	-
US Federal Agency Mortgage Securities	797,272,911	-	797,272,911	-
US Federal Agency Mortgage TBAs	743,219,289	-	743,219,289	-
US Federal Agency Debt	165,603,636	-	165,603,636	-
US Federal Agency Strips	35,777,340	-	35,777,340	-
Non-Government Debt Securities	182,475,856	-	182,475,856	-
Corporate Bonds	2,457,436,141	-	2,425,832,093	31,604,048
Bank Loans	1,502,532,164	-	1,336,859,811	165,672,353
Municipal Bonds	28,201,844	-	28,201,844	-
Collateralized Mortgage Obligations	869,314,513	-	826,889,247	42,425,266
Asset-Backed Securities	528,107,841	-	528,099,602	8,239
Domestic Fixed Income Funds	598,796,147	-	598,796,147	-
International Fixed Income Funds	36,483,217	-	36,483,217	-
Total Debt Securities¹	14,790,003,986	-	14,550,294,080	239,709,906
Public Equity				
Domestic Equity Securities	13,267,869,276	13,213,162,833	-	54,706,443
International Equity Securities	11,679,899,999	11,637,682,861	453,925	41,763,213
Domestic Equity Funds	1,286,567,504	127,930,843	1,158,636,661	-
Global Equity Funds	2,101,105,870	68,646,150	2,032,459,720	-
International Equity Funds	1,323,753,702	1,059,064,233	264,689,469	-
Target Date Fund	535,869,075	-	535,869,075	-
Oregon Savings Growth Plan - Self Directed	7,521,864	7,521,864	-	-
Total Public Equity	30,202,587,290	26,114,008,784	3,992,108,850	96,469,656
Real Estate Investment Trusts	1,805,688,415	1,805,688,415	-	-
Private Equity	15,840,484	-	-	15,840,484
Total Investments by Fair Value Level	\$ 46,814,120,175	\$ 27,919,697,199	\$ 18,542,402,930	\$ 352,020,046

TABLE 8 continues on the next page

Oregon Public Employees Retirement System

TABLE 8 continuing from the previous page

Investments Measured at the Net Asset Value (NAV)

Real Estate	
Real Estate Investments	\$ 6,438,798,922
Real Estate Open Ended Funds	474,196,853
Total Real Estate	<u>6,912,995,775</u>
Private Equity	15,001,504,110
Alternative Equity	
Alternative Real Assets	2,544,294,661
Alternative Diversifying Strategies	1,594,440,527
Total Alternative Equity	<u>4,138,735,188</u>
Opportunity Portfolio	
Opportunity Private Investments	589,256,939
Opportunity Open Ended Funds	998,496,823
Total Opportunity Portfolio	<u>1,587,753,762</u>
Total Investments Measured at the NAV	<u>27,640,988,835</u>
Total Investments Measured at Fair Value	<u>\$ 74,455,109,010</u>

Investments Derivative Instruments

Credit Default Swaps	\$ 767,729	\$	-	\$	767,729	\$	-
Foreign Exchange Forwards	13,221,934	-	-	-	13,221,934	-	-
Forwards	7,531,591	-	-	-	120,272	-	7,411,319
Interest Rate Swaps	6,249,967	-	-	-	6,249,967	-	-
Options	1,842,381	647,425	-	-	1,194,956	-	-
Rights and Warrants	3,465,033	1,196,307	-	-	-	-	2,268,726
Total Return Swaps	3,426,162	-	-	-	3,426,162	-	-
Total Assets	<u>36,504,797</u>	<u>1,843,732</u>	<u>24,981,020</u>	<u>9,680,045</u>	<u>34,944,252</u>	<u>34,944,252</u>	<u>34,944,252</u>
Credit Default Swaps	(3,494,538)	-	-	-	(3,494,538)	-	-
Foreign Exchange Forwards	(27,118,888)	-	-	-	(27,118,888)	-	-
Interest Rate Swaps	(2,517,619)	-	-	-	(2,517,619)	-	-
Options	(1,032,803)	-	-	-	(1,032,803)	-	-
Total Return Swaps	(780,404)	-	-	-	(780,404)	-	-
Total Liabilities	<u>(34,944,252)</u>	<u>1,843,732</u>	<u>(9,963,232)</u>	<u>9,680,045</u>	<u>34,944,252</u>	<u>34,944,252</u>	<u>34,944,252</u>
Total Investments Derivative Instruments	<u>\$ 1,560,545</u>	<u>\$ 1,843,732</u>	<u>\$ (9,963,232)</u>	<u>\$ 9,680,045</u>	<u>\$ 34,944,252</u>	<u>\$ 34,944,252</u>	<u>\$ 34,944,252</u>

Invested Securities Lending Collateral

Asset-Backed Securities	\$ 97,399,497	\$	-	\$	97,399,497	\$	-
Certificates of Deposit	154,019,605	-	-	-	154,019,605	-	-
Commercial Paper	235,137,261	-	-	-	235,137,261	-	-
Corporate Bonds	71,703,372	-	-	-	71,703,372	-	-
Repurchase Agreements	1,015,000,000	-	-	-	1,015,000,000	-	-
U.S. Government & Agencies	70,000,630	-	-	-	70,000,630	-	-
Total Invested Securities Lending Collateral²	<u>\$ 1,643,260,365</u>	<u>\$ -</u>	<u>\$ 1,643,260,365</u>	<u>\$ -</u>	<u>\$ 1,643,260,365</u>	<u>\$ -</u>	<u>\$ -</u>

¹Guaranteed Investment Contracts are excluded from the table as these are stated at contracted value.

²For OSTF's participation in securities lending activity, refer to their audited financial statements at <http://sos.oregon.gov/audits/Documents/2017-19.pdf>.

PERS has the following recurring fair value measurements as of June 30, 2017 (See Table 8 on page 49).

Disclosures regarding redemption and investments valued at the NAV per share (or its equivalent), including Unfunded Commitments, are presented in Table 9 below.

2. Rate of Return

For the year ended June 30, 2017, the annual money-weighted rate of return on defined benefit pension plan investments, net of defined benefit pension plan investment expenses, was 11.76 percent. The annual money-weighted rates of return on the other postemployment healthcare benefits (OPEB) investments, net of OPEB investment expenses, were 12.53 percent for the Retirement Health Insurance Account (RHIA) and 14.33 percent for the Retiree Health Insurance Premium Account (RHIPA). The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the timing of cash flows and the changing amounts actually invested.

3. Investment Concentrations

As of June 30, 2017, there were no organizations that represent 5 percent or more of the pension plan's fiduciary net position, or total investments.

4. Credit Risk Debt Securities

It is OIC's policy that no more than 30 percent of the fixed income manager positions be below investment grade. Securities with a quality rating of below BBB- are

considered below investment grade. There is no policy restriction on other investment managers who may hold debt securities. As of June 30, 2017, the fair value of below grade investments, excluding unrated securities, is \$2,400.4 million, or 30.74 percent, of total securities subject to credit risk and 16.04 percent of total debt securities. The weighted quality rating average is A. Unrated securities include \$161.9 million in bank loans, \$635.3 million in domestic and international fixed income funds, \$178.5 million in guaranteed investment contracts, and \$145.5 million in other debt securities. Unrated federal agency securities include \$256.6 million in Federal Home Loan Mortgage Corporation (FHLMC), \$893.4 million in Federal National Mortgage Association (FNMA), and \$247.3 million in other federal agency securities. These federal agency securities are not rated by the credit rating agencies as these are implicitly guaranteed by the U.S. government. Table 10 on the next page details the quality ratings for credit risk debt securities as of June 30, 2017.

5. Custodial Credit Risk

Custodial credit risk for investments is the risk that in the event of a failure of the counterparty, PERS will not be able to recover the value of the investments or collateral securities that are in the possession of an outside party. OIC has no formal policy regarding the holding of securities by a custodian or counterparty. As of June 30, 2017, no investments were exposed to custodial credit risk.

6. Concentrations of Credit Risk

OIC expects investment managers to maintain diversi-

TABLE 9

Investments Measured at the Net Asset Value				
	Fair Value	Unfunded Commitments*	Redemption Frequency (If Currency Eligible)	Redemption Notice Period
Real Estate				
Real Estate Investments	\$ 6,438,798,922	\$ 2,389,040,848	N/A	N/A
Real Estate Open Ended Funds	474,196,853	50,000,000	Quarterly	45 - 90 days
Private Equity	15,001,504,110	8,350,863,780	N/A	N/A
Alternative Equity				
Alternative Real Assets	2,544,294,661	2,544,981,555	N/A	N/A
Alternative Diversifying Strategies	1,594,440,527	—	Monthly	30 - 75 days
Opportunity Portfolio				
Opportunity Private Investments	589,256,939	559,195,867	N/A	N/A
Opportunity Open Ended Funds	998,496,823	269,648,951	Monthly/Quarterly	5 - 90 days
Total	\$ 27,640,988,835	\$ 14,163,731,001		

* Excludes unfunded commitments associated with investments included in the fair value hierarchy (Levels 1, 2, and 3) and new commitments not yet funded at 6/30/2017.

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TABLE 10

Schedule of Credit Risk at June 30, 2017	
Quality Rating	Fair Value
AAA	\$ 750,577,424
AA	174,138,747
A	582,067,416
BBB	1,382,285,731
BB	660,480,539
B	1,277,330,441
CCC	449,114,505
CC	5,263,380
C	1,506,633
D	6,670,000
Not Rated	1,121,213,205
Not Rated - U.S. Agency ¹	<u>1,397,338,773</u>
Total Subject to Credit Risk	7,807,986,794
U.S. Government Guaranteed Securities	<u>7,160,553,076</u>
Total Debt Securities	\$ <u>14,968,539,870</u>

¹ Federal Agency securities are not rated by the credit rating agencies as they carry an implicit guarantee of the US Government. See note disclosure for more detail.

TABLE 11

Schedule of Interest Rate Risk - Effective Duration at June 30, 2017		
Investments	Fair Value	Effective Weighted Duration Rate (in years)
US Treasury Obligations	\$ 6,659,894,035	6.91
US Treasury Obligations - Strips	41,009,528	0.21
US Treasury Obligations - TIPS	143,879,524	5.17
US Federal Agency Mortgage Securities	797,272,911	3.82
US Federal Agency Mortgage TBAs	743,219,289	4.26
US Federal Agency Debt	165,603,636	0.72
US Federal Agency Strips	35,777,340	1.85
International Debt Securities	895,643,794	2.77
Non-US Government Debt Securities	94,969,752	8.48
Corporate Bonds	1,966,418,116	5.68
Bank Loans	1,236,139,550	0.27
Municipal Bonds	28,201,844	10.89
Collateralized Mortgage Obligations	860,759,568	1.87
Asset-Backed Securities	357,512,116	1.33
Domestic Fixed Income Funds	598,796,147	4.62
International Fixed Income Funds	36,483,217	4.31
No Effective Duration:		
International Debt Securities	14,993,934	N/A
Non-US Government Debt Securities	87,506,104	N/A
Corporate Bonds	12,742,406	N/A
Bank Loans	13,181,175	N/A
Guaranteed Investment Contracts	<u>178,535,884</u>	N/A
Total Debt Securities	14,968,539,870	
Cash Equivalent - Mutual Funds - STIF	1,595,814,044	24 Days ¹
Cash Equivalent - Oregon Short Term Funds	<u>827,875,388</u>	173 Days ¹
Total Subject to Interest Rate Risk	\$ <u>17,392,229,302</u>	

¹Weighted average maturity. Pools are not rated.

fied portfolios. There is no limit on single issuer investments for domestic, global, and international equity fund managers. Policy states that the asset classes will be diversified across their respective markets. Additionally, both passive and active investing strategies are employed, and several external managers engage in active management. OIC provides the following limitations for fixed income manager positions:

- obligations issued or guaranteed by the U.S. government, U.S. agencies, or government-sponsored enterprises — no restriction;
- obligations of other national governments — no more than 10 percent of the debt investment portfolio per issuer;
- private mortgage-backed and asset-backed securities, unless collateral is credit independent of the issuer and the security's credit enhancement is generated internally — no more than 10 percent of the debt investment portfolio per issuer; 25 percent per issuer if the collateral exception is met; and
- other issuers, excluding investments in commingled vehicles — no more than 3 percent of the debt investment portfolio.

As of June 30, 2017, there were no single issuer debt investments that exceeded the above guidelines nor were there investments in any one issuer that represent 5 percent or more of total investments or total net position.

7. Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. This risk is managed within the portfolio using the effective duration methodology. Policies state that the fixed income manager positions will maintain a weighted average effective duration within plus or minus 20 percent of the benchmark's effective duration. There is no policy restriction for non-fixed income investment managers who may hold fixed income positions. As of June 30, 2017, the weighted average duration of PERS' fixed income portfolio was 4.20 years.

Effective duration is a measure of a fixed income investment's exposure to fair value changes arising from changes in interest rates. Effective duration makes assumptions regarding the most likely timing and amounts of variable cash flows. These assumptions take into consideration factors indicative of investments highly sensitive to interest rate changes, including callable options, prepayments, and other factors. These factors are reflected in the effective duration numbers provided herein.

No individual fixed income investment manager's

portfolio was outside the policy guidelines at June 30, 2017. Table 11 on page 52 shows the investments by type, amount, and effective weighted duration.

At June 30, 2017, PERS held approximately \$1,658.0 million in debt instruments backed by pooled mortgages, Collateralized Mortgage Obligations (CMOs), or fixed-rate mortgages. These securities represent a stream of principal and interest payments from underlying mortgages. Assets with these characteristics are susceptible to prepayment by the mortgage holders which may result in a decrease in total interest realized. The value of these securities can be volatile as interest rates fluctuate. Additionally, the risk of default exists and collateral held may potentially be insufficient to cover the principal due. PERS also held approximately \$743.2 million in To-Be-Announced (TBA) federal agency-issued mortgage pools. An additional \$357.5 million of debt instruments held are asset-backed securities backed primarily by automobiles, consumer credit receivables, heavy equipment leases, and student loan receivables.

8. Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. Policy states that no more than 25 percent of the fixed income manager positions may be invested in non-dollar denominated securities. Policies for the non-fixed portion of PERS' portfolio are silent regarding this risk. As of June 30, 2017, approximately 1.2 percent of the debt investment portfolio was invested in non-dollar denominated securities. See Table 12 on the next page.

9. Unfunded Commitments

OIC has entered into agreements that commit OPERF, upon request, to make additional investment purchases up to a predetermined amount. As of June 30, 2017, the OPERF had \$10,458.6 million in commitments to purchase private equity investments, which includes \$5,047.4 million in callable distributions, \$2,689.3 million in commitments to purchase real estate investments, \$2,545.0 million in commitments to purchase alternative equity investments, which includes \$280.2 million in callable distributions, and \$828.8 million in commitments to purchase opportunity portfolio investments, which includes \$202.4 million in callable distributions. These amounts are unfunded and are not recorded in the Statement of Fiduciary Net Position.

C. Securities Lending

In accordance with state investment policies, OPERF participates in securities lending transactions. Through securities lending authorization agreements, the Oregon State Treasury has authorized its custodian,

Oregon Public Employees Retirement System

TABLE 12

Currency Exposures by Asset Class in US Dollar Equivalents as of June 30, 2017								
Currency	Cash and Cash			Derivatives in		Real Estate	Alternative Equity	Total
	Equivalents	Debt Securities	Public Equity	Asset Positions				
Argentine peso	\$ 20,084	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 20,084
Australian dollar	2,188,481	-	365,645,401	109,218	33,602,507	-	-	401,545,607
Bolivar fuerte	10	-	6	-	-	-	-	16
Brazilian real	3,902,274	373,371	183,129,238	-	918,264	-	-	188,323,147
Canadian dollar	1,436,710	3,571,528	594,179,180	40,044	16,066,666	-	-	615,294,128
Chilean peso	376,117	-	12,618,362	-	-	-	-	12,994,479
Chinese yuan	5,540,604	754,943	36,760,586	-	-	-	-	43,056,133
Colombian peso	2,950	-	8,132,319	-	-	-	-	8,135,269
Czech koruna	124,693	-	10,648,789	-	-	-	-	10,773,482
Danish krone	350,130	2,981	190,876,993	-	-	-	-	191,230,104
Egyptian pound	336	-	12,760,200	-	-	-	-	12,760,536
Euro	11,313,807	51,314,863	2,082,201,486	1,973,100	28,830,439	432,796,881	-	2,608,430,576
Hong Kong dollar	6,501,413	-	755,627,824	165	28,642,819	-	-	790,772,221
Hungarian forint	84,037	-	14,327,717	-	-	-	-	14,411,754
Indian rupee	3,946,505	-	244,528,961	-	-	-	-	248,475,466
Indonesian rupiah	152,745	-	46,688,196	-	-	-	-	46,840,941
Israeli shekel	265,084	-	85,300,290	-	1,809,071	-	-	87,374,445
Japanese yen	10,640,773	103,161,089	1,705,232,819	-	22,258,708	-	-	1,841,293,389
Kenya shilling	-	-	3,829,069	-	-	-	-	3,829,069
Malaysian ringgit	623,526	-	85,559,088	-	-	-	-	86,182,614
Mexican peso	2,701,802	13,160,866	61,620,739	-	12,132,339	-	-	89,615,746
Moroccan dirham	-	-	2,687,093	-	-	-	-	2,687,093
New Zealand dollar	519,715	-	22,739,479	356,040	155,777	-	-	23,771,011
Nigerian naira	-	-	5,007,025	-	-	-	-	5,007,025
Norwegian krone	548,348	-	85,508,310	12,515	-	-	-	86,069,173
Pakistani rupee	190,482	-	5,020,943	-	-	-	-	5,211,425
Peruvian nuevo sol	-	-	947,032	-	-	-	-	947,032
Philippine peso	15,332	-	17,724,676	-	-	-	-	17,740,008
Polish zloty	39,384	-	39,697,691	-	-	-	-	39,737,075
Pound sterling	9,307,165	7,456,344	1,977,575,856	2,344,850	7,042,080	-	-	2,003,726,295
Qatar riyal	3,281	-	3,174,719	-	-	-	-	3,178,000
Singapore dollar	1,044,075	-	110,037,902	-	7,314,826	-	-	118,396,803
South African rand	302,177	-	204,335,698	-	123,723	-	-	204,761,598
South Korean won	657,964	-	569,936,518	4,260	-	-	-	570,598,742
Swedish krona	423,406	-	279,396,278	1,115,439	-	-	-	280,935,123
Swiss franc	1,094,797	-	629,038,713	1,687,676	-	-	-	631,821,186
Taiwan dollar	588,658	-	326,903,163	-	-	-	-	327,491,821
Thai baht	177,975	-	93,728,619	-	302,772	-	-	94,209,366
Tunisia dinar	-	-	1,218,428	14	-	-	-	1,218,442
Turkish lira	914,176	-	120,076,775	-	1,892,904	-	-	122,883,855
United Arab Emirates dirham	5,713	-	13,639,598	-	-	-	-	13,645,311
Total Subject to Foreign								
Currency Risk	\$ 66,004,729	\$ 179,795,985	\$ 11,008,061,779	\$ 7,643,321	\$ 161,092,895	\$ 432,796,881	\$ 11,855,395,590	

State Street Bank, to lend its securities pursuant to the terms and conditions of policy and applicable agreements. Both OPERF and the borrowers maintained the right to terminate all securities lending transactions on demand. There were no significant violations of the provisions of securities lending agreements during the period of these financial statements.

The custodian had the authority to loan short-term, fixed income, and equity securities and to receive as collateral U.S. dollar and foreign currency cash, U.S. government and agency securities, letters of credit, and foreign sovereign debt of Organization of Economic Cooperation and Development (OECD) countries. Borrowers were required to deliver collateral for each loan equal to not less than 102 percent of the market value of loaned U.S. secu-

rities and international fixed income securities, or 105 percent in the case of international equity. The custodian did not have the ability to pledge or sell collateral securities absent a borrower default, and OPERF did not impose any restrictions during the fiscal year on the amount of the loans the custodian made on its behalf. OPERF is fully indemnified against losses due to borrower default by its current custodian. There were no losses during the year from the failure of borrowers to return loaned securities and no recoveries of amounts from prior losses.

Prior to July 1, 2010, OPERF was a participant in a securities lending collateral reinvestment pool managed by State Street Global Advisors (“SSgA”), a division of State Street Bank. On July 1, 2010, OPERF withdrew from this pool and directed SSgA to allocate its share of

pool assets into a new legacy fund owned exclusively by OPERF. At the same time OPERF also directed SSgA to open a new securities lending collateral reinvestment fund for ongoing lending activities. The legacy fund will be maintained until all existing assets have matured or been sold, and proceeds will be invested in the new fund. Since the assets in the legacy and new funds are wholly owned by OPERF, the balances in the funds are stated at fair value in the Statements of Fiduciary Net Position as of June 30, 2017. Previous securities lending collateral reinvestment pool balances were stated at “constant value,” which approximates fair value, since OPERF was a participant in a pool along with other qualified plans, due to the lending agent’s practice of redeeming shares at \$1.00 per unit. The investments in the legacy and new funds are held by the custodian.

The maturities of investments made with cash collateral did not generally match the maturities of the securities loaned. Since the securities loaned are callable on demand by either the lender or borrower, the life of the loans at June 30, 2017, is effectively one day. On June 30, 2017, OPERF had no credit risk exposure to borrowers because the amounts OPERF owes borrowers exceeds the amounts borrowers owe OPERF.

On June 30, 2017, the fair value of cash collateral received and invested cash collateral were \$1,641.8 million and \$1,641.3 million, respectively. The cumulative unrealized loss in invested cash collateral of \$0.5 million has been recognized in securities lending income in the Statements of Changes in Fiduciary Net Position in the period in which the gain or losses occurred. For the fiscal year ended June 30, 2017, total income from securities lending activity was \$22.4 million, and total expenses for the period were \$10.5 million for a net gain of \$11.9 million.

OSTF also participates in securities lending activity. OPERF receives an allocated portion of this activity based on its deposits in OSTF. As of June 30, 2017, OPERF’s allocated portion of cash collateral received and invested cash collateral were \$3.8 million and \$3.8 million, respectively.

Cash collateral received for OSTF securities lent is invested in securities lending collateral pools and is not exposed to custodial risk. For more information on OSTF’s participation in securities lending activity, refer to their audited financial statements at: <http://sos.oregon.gov/audits/Documents/2017-19.pdf>.

Table 13 on the next page shows the combined balances of the securities on loan, cash and securities collateral received, and investments of cash collateral held. Securities lending collateral subject to credit risk as of June

30, 2017, is shown in Table 14 on the next page. Securities lending collateral subject to interest rate risk as of June 30, 2017, is shown in Table 15, also on the next page.

D. Derivatives

Oregon Investment Council policy allows, with some restrictions, for the use of derivative instruments in the prudent management of OPERF investments. Certain internally and externally managed accounts are allowed, through contract and policy, to invest in derivative instruments to carry out their investment management activities. Risks inherent with derivatives are managed through investment management’s adherence to contractual and policy prescribed terms that are consistent with OPERF’s investing objectives.

All derivative instruments held by OPERF are considered investments. The fair value of OPERF derivative investments is reported in the Investment Sales and Other Receivables, Investment Purchases and Accrued Expenses, and the Public Equity lines of the Statements of Fiduciary Net Position – Pension and Other Postemployment Plans on pages 30 and 31. Changes in fair value during the fiscal year are reported in the Net Appreciation in Fair Value of Investments line of the Statements of Changes in Fiduciary Net Position – Pension and Other Postemployment Plans on pages 32 and 33.

Table 16 on page 57 presents the related net appreciation/(depreciation) in fair value amounts and the notional amounts of derivative instruments outstanding as of June 30, 2017.

A forward foreign currency exchange contract is a forward contract that is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. The fair value of a foreign currency forward is determined by the difference between the contract exchange rate and the closing exchange rate, at the end of reporting period. Risks associated with such contracts include movement in the value of foreign currencies and the ability of the counterparty to perform.

A futures contract represents a commitment to purchase or sell an underlying asset at a future date and at a specified price. Futures contracts have standardized terms and are traded on exchanges. The counterparty credit risk for futures is generally less than for privately negotiated forward contracts, since the clearinghouse, which is the issuer or counterparty to each exchange-traded future, settles daily the net change in the futures contract’s value in cash with the broker and results in the contract itself having no fair value at the end of any trading day.

A swap is an agreement that obligates two parties to

Oregon Public Employees Retirement System

TABLE 13

<u>Securities Lending as of June 30, 2017</u>			
Investment Type	Securities on Loan at Fair Value	Cash and Securities Collateral Received	Investments of Cash Collateral at Fair Value
U.S. Treasury Securities	\$ 346,411,024	\$ 353,823,786	\$ 41,414,445
U.S. Agency Securities	16,013,807	16,362,070	–
Domestic Equity Securities	1,265,776,859	1,296,049,828	1,122,342,366
Domestic Debt Securities	245,969,092	251,551,127	247,450,007
International Equity Securities	582,586,392	616,953,677	227,734,775
International Debt Securities	2,279,626	2,323,600	2,322,896
Allocation from Oregon Short Term Fund	13,648,912	13,933,792	3,753,288
Total	\$ 2,472,685,712	\$ 2,550,997,880	\$ 1,645,017,777

TABLE 14

<u>Securities Lending Invested Cash Collateral Subject to Credit Risk as of June 30, 2017</u>	
Quality Rating	Fair Value
AAA	\$ 164,450,901
AA ¹	602,696,553
A	221,163,684
B	2,949,227
Total Subject to Credit Risk	991,260,365
U.S. Government Guaranteed Repurchase Agreements	650,004,124
Allocation from Oregon Short Term Fund	3,753,288
Total Securities Lending Invested Cash Collateral	\$ 1,645,017,777

¹ Commercial paper ratings of A-1+/A-1/P-1 categorized as AA.

TABLE 15

<u>Securities Lending Invested Cash Collateral Subject to Interest Rate Risk as of June 30, 2017</u>		
Security Type	Fair Value	Effective Weighted Duration Rate (in days)¹
Asset-Backed Securities	\$ 97,399,497	13
U.S. Government & Agencies	70,000,630	3
Certificates of Deposit	154,019,605	87
Corporate Bonds	71,703,372	48
Commercial Paper	235,137,261	88
Repurchase Agreements	363,000,000	2
Total Subject to Interest Rate Risk	991,260,365	40
U.S. Government Guaranteed Repurchase Agreements	650,004,124	
Allocation from Oregon Short Term Fund	3,753,288	
Total Securities Lending Invested Cash Collateral	\$ 1,645,017,777	

¹ Weighted average days to maturity or next reset date.

TABLE 16

Derivative Instruments as of June 30, 2017

Investment Derivatives	Net Appreciation/ (Depreciation) in		Classification	Fair Value	Notional Value ²
	Fair Value of Investments ^{1,3}				
Credit Default Swaps Bought	\$	(533,006)	Public Equity	\$ 118,558	\$ 16,488,000
Credit Default Swaps Written		1,023,067	Public Equity	(2,845,367)	74,049,000
Fixed Income Futures Long		(23,873,894)	Public Equity	–	2,371,913,095
Fixed Income Futures Short		25,722,729	Public Equity	–	(569,828,555)
Fixed Income Options Bought		(762,637)	Public Equity	663,430	28,910,000
Fixed Income Options Written		1,867,298	Public Equity	(273,628)	(292,902,285)
Foreign Currency Options Bought		(1,192,347)	Public Equity	531,528	121,513,384
Foreign Currency Options Written		801,260	Public Equity	(591,613)	(92,918,226)
Futures Options Bought		(4,912,022)	Public Equity	647,425	2,633,000
Futures Options Written		4,504,759	Public Equity	(167,563)	(1,436,000)
Foreign Exchange Forwards		(19,422,964)	Receivables/Payables	(13,896,955)	3,155,031,861
Index Futures Long		251,286,370	Public Equity	–	9,457,110
Index Futures Short		(30,546,087)	Public Equity	–	(2,717,840)
Pay Fixed Interest Rate Swaps		23,911,819	Public Equity	3,939,081	513,069,603
Receive Fixed Interest Rate Swaps		(4,159,539)	Public Equity	(206,733)	182,841,718
Rights		2,226,728	Public Equity	1,189,688	2,555,302
Total Return Swaps Bond		(20,399,229)	Public Equity	2,690,172	159,148,315
Total Return Swaps Equity		6,091,377	Public Equity	(44,414)	(52,589,976)
Warrants		(632,576)	Public Equity	2,275,345	8,826,179
Total	\$	211,001,106		\$ (5,971,046)	\$ 5,634,043,685

¹ Negative values (in brackets) refer to losses.

² Notional may be a dollar amount or size of underlying for futures, rights, warrants, and options. Negative values refer to short positions.

³ Excludes futures margin payments.

exchange a series of cash flows or the net value of cash flows at specified intervals based upon, or calculated by, reference to changes in specified prices or rates for a specified amount of an underlying asset. Swaps are privately negotiated contracts with customized terms and are transacted in over-the-counter markets. OPERF held various types of swaps including credit default, interest rate, and total return swaps. The payment flows are usually netted against each other, with the difference being paid by one party or another. In addition, collateral may be pledged or received by OPERF in accordance with the terms of the respective swap agreements to provide value and recourse to OPERF or its counterparties. Swaps are subject to general market risk, liquidity risk, credit risk, interest rate risk and the risk that the counterparty may fail to perform.

An option is an instrument that gives one party the right, but not the obligation, to buy or sell an underlying asset from or to another party at a fixed price over a specified period of time. In writing an option, OPERF bears the market risk of an unfavorable change in the price of the underlying investment of the written option. Exercise of an option written by OPERF could result in OPERF selling or buying an asset at a price different from the current

market value. Options may be subject to interest rate risk, general market risk, liquidity risk, credit risk, foreign currency risk, and, for non-exchange traded options, the risk of the counterparty's ability to perform.

Rights are the right, but not the obligation, to purchase newly issued equity shares, often in proportion to the number of shares currently owned, in a specified company, at a pre-established price on or within a pre-determined date. A warrant provides the holder the right, but not the obligation, to purchase securities from the issuing entity at a specific price and within a certain time period. In the OPERF portfolio, rights and warrants are often obtained and held due to existing investments and are subject to general market risk and liquidity risk.

Counterparty Credit Risk

Table 17 on the next page presents a summary of counterparty credit ratings relating to derivative instruments as of June 30, 2017.

Interest Rate Risk

As of June 30, 2017, OPERF is exposed to interest

TABLE 17

Derivative Instruments Subject to Counterparty Credit Risk as of June 30, 2017				
Counterparty Name	Percentage of Net Exposure	S&P Rating	Fitch Rating	Moody's Rating
Citibank N.A.	27.87%	A+	A+	A1
Morgan Stanley Co. Incorporated	9.48%	BBB+	A	A3
Barclays Bank CME	7.64%	A-	A	A1
Morgan Stanley and Co. Incorporated	6.95%	BBB+	A	A3
Bank of America, N.A.	5.96%	A+	A+	A1
JP Morgan Chase Bank N.A.	5.37%	A+	AA-	Aa3
State Street Bank and Trust Company	5.37%	AA-	AA	Aa3
UBS AG	4.43%	A+	A+	A1
Credit Suisse International	4.11%	A	A	A1
Standard Chartered Bank	3.89%	A	A+	A1
Royal Bank of Scotland PLC	3.63%	BBB+	BBB+	A3
Citigroup	2.58%	BBB+	A	Baa1
Morgan Stanley ICE	1.94%	BBB+	A	A3
Barclays Bank PLC Wholesale	1.54%	A-	A	A1
Morgan Stanley LCH	1.42%	BBB+	A	A3
JP Morgan CME	1.34%	A-	A+	A3
Royal Bank of Canada	1.06%	AA-	AA	A1
Bank of Montreal	0.94%	A+	AA-	A1
Brown Brothers Harriman & Co.	0.78%	NR	A+	NR
Morgan Stanley	0.68%	BBB+	A	A3
Morgan Stanley CME	0.64%	BBB+	A	A3
BNP Paribas SA	0.59%	A	A+	A1
Deutsche Bank AG	0.51%	A-	A-	Baa2
Australia and New Zealand Banking Group	0.42%	AA-	AA-	Aa3
Bank of New York	0.26%	A	AA-	A1
Goldman Sachs International	0.21%	A+	A	A1
Morgan Stanley and Co. International PLC	0.21%	BBB+	A	A3
JP Morgan Chase Bank	0.16%	A+	AA-	Aa3
Barclays De Zoete Wedd Holdings Ltd.	0.02%	A-	A	A1
	<u>100.00%</u>			

TABLE 18

Derivative Instruments Subject to Interest Rate Risk as of June 30, 2017					
Investment Type	Fair Value	Investment Maturities (in years)			
		Less Than 1	1 - 5	6 - 10	More than 10
Credit Default Swaps Bought	\$ 118,558	\$ -	\$ -	\$ -	\$ 118,558
Credit Default Swaps Written	(2,845,367)	9,442	532,690	47,563	(3,435,062)
Fixed Income Options Bought	663,430	-	663,430	-	-
Fixed Income Options Written	(273,628)	(273,628)	-	-	-
Pay Fixed Interest Rate Swaps	3,939,081	-	114,605	3,824,476	-
Receive Fixed Interest Rate Swaps	(206,733)	-	(576,487)	369,754	-
Total Return Swaps Bond	2,690,172	2,690,172	-	-	-
Total Return Swaps Equity	(44,414)	(44,414)	-	-	-
Total	\$ 4,041,099	\$ 2,381,572	\$ 734,238	\$ 4,241,793	\$ (3,316,504)

TABLE 19

Derivative Instruments Highly Sensitive to Interest Rate Changes as of June 30, 2017			
Investment Type	Reference Rate	Fair Value	Notional Value
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 1.89700%	\$ 179,205	\$ 52,000,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 1.90000%	446,684	93,124,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 1.58000%	1,315,976	24,200,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 1.26653%	2,265,026	53,120,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.03000%	(141,184)	26,190,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 1.46000%	126,448	2,004,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.25900%	(91,114)	16,480,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.48800%	(108,834)	4,520,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.24700%	(92,536)	6,020,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.81700%	(475,708)	10,200,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.88850%	(726,734)	14,340,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 1.67150%	257,315	5,280,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 1.65700%	263,893	5,280,000
Pay Fixed Interest Rate Swaps	Receive Variable 6-month Japanese LIBOR, Pay Fixed 0.09900%	(243)	69,510,769
Pay Fixed Interest Rate Swaps	Receive Variable 3-month Swedish LIBOR, Pay Variable 3-month Swedish LIBOR	-	16,090,959
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.28650%	(47,673)	18,240,000
Pay Fixed Interest Rate Swaps	Receive Variable 12-month FEDL, Pay Fixed 1.56000%	90,516	16,590,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 1.80000%	258,053	47,030,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.12400%	109,677	8,410,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.11700%	100,771	7,369,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.12100%	111,429	8,370,000
Pay Fixed Interest Rate Swaps	Receive Variable 3-month LIBOR, Pay Fixed 2.12150%	98,114	7,395,000
Pay Fixed Interest Rate Swaps	Receive Variable 1-month Mexican TIIE, Pay Fixed 7.09000%	-	1,305,874
Subtotal - Pay Fixed Interest Rate Swaps		3,939,081	513,069,602
Receive Fixed Interest Rate Swaps	Receive Fixed 1.18500%, Pay Variable 3-month LIBOR	(616,025)	24,250,000
Receive Fixed Interest Rate Swaps	Receive Fixed 2.72000%, Pay Variable 3-month LIBOR	49,953	11,680,000
Receive Fixed Interest Rate Swaps	Receive Fixed 2.62750%, Pay Variable 3-month LIBOR	202,629	5,850,000
Receive Fixed Interest Rate Swaps	Receive Fixed 2.49700%, Pay Variable 3-month LIBOR	117,172	5,380,000
Receive Fixed Interest Rate Swaps	Receive Fixed 2.93600%, Pay Variable 3-month New Zealand BBR	188,253	40,153,850
Receive Fixed Interest Rate Swaps	Receive Fixed 0.34125%, Pay Variable 3-month Swedish STIBOR	(26,573)	16,090,959
Receive Fixed Interest Rate Swaps	Receive Fixed 1.58000%, Pay Variable 3-month LIBOR	(83,229)	69,375,000
Receive Fixed Interest Rate Swaps	Receive Fixed 0.14550%, Pay Variable 6-month EURIBOR	(38,913)	6,478,324
Receive Fixed Interest Rate Swaps	Receive Fixed 6.77000%, Pay Variable 1-month Mexican TIIE	-	3,583,585
Subtotal - Receive Fixed Interest Rate Swaps		(206,733)	182,841,718
Total Interest Rate Swaps		\$ 3,732,348	\$ 695,911,320

rate risk on its various swap arrangements and options. Table 18 on the previous page presents a segmented time schedule of those instruments, and Table 19 above shows a schedule of derivative instruments that were highly sensitive to interest rate changes.

Foreign Currency Risk

OPERF is exposed to foreign currency risk on its derivative instruments. Table 20 on the next page presents a summary of derivative instruments subject to foreign currency risk as of June 30, 2017.

Note 5 - Capital Assets Used in Plan Operations

Capital construction of PERS' headquarters in Tigard, Oregon, was completed May 31, 1997. The land, building, and improvements are recorded at cost. The depreciation of the building and improvements is computed on the straightline method over the estimated useful life of 40 years.

Data processing hardware, furniture, and equipment are recorded at cost. These are items that are not consumed in the normal course of operations, have a useful life of more than one year, and whose value is \$5,000 or more.

Depreciation is computed using the straight-line method over the assets' estimated useful lives. Useful lives range from three to 10 years.

Data processing software generated internally as part of the Oregon Retirement Information On-line Network (ORION) project is recorded at cost. The useful life is amortized using the straight-line method over 20 years. See Table 21 on page 61.

Note 6 - Long-Term Debt

In 1997 PERS completed construction on its retirement system headquarters building in Tigard, Oregon. The construction was financed by the sale of certificates of participation (COP), Series A. In March 2002, a new COP, Series

Oregon Public Employees Retirement System

TABLE 20

Derivative Instruments Subject to Foreign Currency Risk as of June 30, 2017						
Currency Name	Currency Forward Contracts		Options/Rights/ Warrants	Swaps		Total Exposure
	Net Receivables	Net Payables				
Australian dollar	\$ 3,411,351	\$ (2,963,815)	\$ 18,694	\$ –		\$ 466,230
Brazilian real	57,346	(42,618)	–	–		14,728
Canadian dollar	1,783,409	(3,485,776)	24,951	–		(1,677,416)
Danish krone	19,472	(576,515)	–	–		(557,043)
Euro	5,569,091	(7,935,056)	1,182,635	857,914		(325,416)
Hong Kong dollar	(8,983)	67,193	165	(44,414)		13,961
Hungarian forint	138,194	–	–	–		138,194
Indian rupee	95,259	(378)	–	–		94,881
Indonesian rupiah	(14)	–	–	–		(14)
Japanese yen	(4,575,038)	4,154,106	–	(243)		(421,175)
Malaysian ringgit	(37,881)	–	–	–		(37,881)
Mexican peso	247,772	–	–	–		247,772
New Israeli sheqel	224,259	(402,515)	–	–		(178,256)
New Taiwan dollar	(127,939)	145,198	–	–		17,259
New Zealand dollar	453,377	(3,770,277)	(168,457)	188,253		(3,297,104)
Norwegian krone	46,813	(603,469)	12,515	–		(544,141)
Polish zloty	–	–	–	–		–
Pound sterling	560,282	(2,435,478)	2,236,632	–		361,436
Russian ruble	(395,516)	(242,557)	–	–		(638,073)
Singapore dollar	34,106	(23,061)	–	–		11,045
South African rand	399,678	–	–	–		399,678
South Korean won	–	240,718	4,260	–		244,978
Swedish krona	1,375,360	(3,556,013)	–	845,418		(1,335,235)
Swiss franc	337,688	(2,340,284)	–	921,354		(1,081,242)
Tunisian dinar	–	–	14	–		14
Turkish lira	488,866	(57,748)	–	–		431,118
Yuan renminbi	656,925	(776,280)	–	–		(119,355)
Yuan renminbi - Offshore	8,375	(54,582)	–	–		(46,207)
Total Subject to Foreign Currency Risk	10,762,252	(24,659,207)	3,311,409	2,768,282		(7,817,264)
U.S. dollar	–	–	963,203	883,015		1,846,218
Total	\$ 10,762,252	\$ (24,659,207)	\$ 4,274,612	\$ 3,651,297		\$ (5,971,046)

TABLE 21

Schedule of Capital Assets as of June 30, 2017				
	Beginning of Year	Increases	Decreases	End of Year
Capital Assets				
Furniture and Equipment	\$ 1,439,309	\$ 115,185	\$ (368,779)	\$ 1,185,715
Data Processing Software	40,340,677	137,366	(82,842)	40,395,201
Data Processing Hardware	1,946,442	344,085	(455,698)	1,834,829
Building and Building Improvements	8,617,633	74,364	–	8,691,997
Land	944,463	–	–	944,463
Total Capital Assets	53,288,524	671,000	(907,319)	53,052,205
Less Accumulated Depreciation				
Furniture and Equipment	(855,783)	(65,412)	115,185	(806,010)
Data Processing Software	(15,337,201)	(2,001,731)	74,248	(17,264,684)
Data Processing Hardware	(1,085,681)	(328,627)	218,992	(1,195,316)
Building and Building Improvements	(3,802,802)	(287,003)	–	(4,089,805)
Total Accumulated Depreciation	(21,081,467)	(2,682,772)	408,424	(23,355,815)
Capital Assets, Net	\$ 32,207,057	\$ (2,011,772)	\$ (498,895)	\$ 29,696,390
Depreciation Expense				
		Amount		
Defined Benefit Pension Plan Depreciation		\$ 2,646,909		
Oregon Public Service Retirement Plan				
Individual Account Program Depreciation		35,863		
Total Depreciation Expense		\$ 2,682,772		

B, was issued and used to refund the original Series A COP. In April 2012 an XI-Q general obligation bond, 2012 Series K, was issued to refund the 2002 Series B COP. The final Series K bond payment was made May 1, 2017.

Table 22 below summarizes the changes in long-term debt for the year ended June 30, 2017.

Note 7 - Reserves and Designations

In accordance with the following plan requirements, various funds have been established to account for re-

serves or designations held for future and current payments:

Chapter 238 Defined Benefit Plan

Table 23 on page 62 details the amounts comprising the total Net Position Restricted for Pension Benefits.

A. Member Reserve

The Member Reserve represents member contributions made through December 31, 2003, and earnings allocations less refunds and amounts transferred to reserves for retirements and disabilities.

TABLE 22

Long-Term Debt Activity				
	Balance June 30, 2016	Additions	Deductions	Balance June 30, 2017
PERS Building Principal	\$ 615,000	\$ –	\$ (615,000)	\$ –
Plus: Premium (Net)	52,460	–	(52,460)	–
Total Bonds Payable	\$ 667,460	\$ –	\$ (667,460)	\$ –

Oregon Public Employees Retirement System

B. Employer Contribution Designation

The Employer Contribution Designation represents employer contributions and earnings allocations less amounts transferred to reserves for retirements and disabilities.

C. Benefit Reserve

The Benefit Reserve is the amount set aside to pay future benefits. It includes funds transferred from the individual member and employer accounts and earnings allocations less amounts paid for retirements and disabilities.

D. Tier One Rate Guarantee Reserve

The Tier One Rate Guarantee Reserve may be credited with investment earnings in excess of the required Tier One assumed earnings rate guarantee. ORS 238.255(1) requires regular accounts for Tier One members to be credited at the assumed rate of return on investments adopted by the Board for use in actuarial valuations.

The regular account for Tier One members and alternate payees of those members cannot be credited with earnings in excess of the assumed interest rate until:

(a) the reserve is fully funded with amounts determined by the Board, after consultation with the actuary employed by the Board, necessary to ensure a zero balance in the reserve when all Tier One members and alternate payees of those members have retired; and

(b) the reserve has been fully funded as described in paragraph (a) of this subsection in each of the three immediately preceding calendar years.

E. Contingency Reserve

The Contingency Reserve is to be maintained and used by the Board to prevent any deficit of moneys available for the payment of retirement allowances due to interest fluctuations, changes in mortality rates, or other unforeseen contingency.

F. Employer Contingency Reserve

The Employer Contingency Reserve was established by the Board to prevent any deficit in the fund caused by the insolvency of an employer. Only earnings on employer contributions fund this reserve.

G. Unallocated Earnings Designation

The Unallocated Earnings Designation represents January through June investment earnings or losses less administrative expenses, which will be credited on a calendar year basis. Crediting takes place in March of the following year after employer annual reports have been reconciled and contributions have been posted to individual member and employer accounts.

H. OPSRP Defined Benefit Program

OPSRP Defined Benefit Program reserve represents the program's accumulation of employer contributions and investment earnings less benefits and administrative expenses.

Other Postemployment Benefits Plans

I. Retirement Health Insurance Account (RHIA)

The RHIA plan fiduciary net position balance represents the program's accumulation of employer contribu-

TABLE 23

Reserves and Designations	Defined Benefit Pension Plan
Chapter 238 Defined Benefit Plan and Employee Benefit Plan	
Member Reserve	\$ 4,889,471,034
Employer Contribution Designation	26,827,104,758
Benefit Reserve	20,775,613,697
Tier One Rate Guarantee Reserve	448,776,254
Contingency Reserve	558,180,276
Employer Contingency Reserve	25,000,000
Unallocated Earnings Allocation	9,330,257,331
OPSRP Defined Benefit Program	3,517,299,897
Net Position Restricted for Pension Benefits	\$ 66,371,703,247

tions and investment earnings less premium subsidies and administrative expenses. As of June 30, 2017, the balance of this account was \$511.8 million. The Internal Revenue Code limits employer contributions to a 401(h) account to a maximum of 25 percent of the employer’s normal cost contributions to the pension plan.

J. Retiree Health Insurance Premium Account (RHIPA)

The RHIPA plan fiduciary net position balance represents the program’s accumulation of employer contributions and investment earnings less premium subsidies and administrative expenses. As of June 30, 2017, the balance of this account was \$24.3 million. The Internal Revenue Code limits employer contributions to a 401(h) account to a maximum of 25 percent of the employer’s normal cost contributions to the pension plan.

Other Plans

K. Deferred Compensation Plan

The Deferred Compensation plan fiduciary net position balance represents the program’s accumulation of plan member contributions and investment earnings less benefits paid and administrative expenses. As of June 30, 2017, the balance of this account was \$1,770.1 million. The Internal Revenue Code (IRC) limits plan member contributions to an IRC 457 account to a maximum of \$18,000 (for calendar year 2017), with optional catch up provisions available to members over age 50.

Enterprise Fund

M. Standard Retiree Health Insurance Account (SRHIA)

The SRHIA net position balance represents the program’s accumulation of retiree insurance premiums, reinsurance reimbursements, and interest earnings less insurance claims and administrative expenses. As of June 30, 2017, the balance of this account was \$55.3 million.

Note 8 - Litigation

PERS is a defendant in various lawsuits. Although the outcome of these lawsuits is not presently determinable, in the opinion of the System's legal counsel, the resolution of these matters will not have a material adverse effect on the financial condition of the System.

Note 9 - Standard Retiree Health Insurance Account

A. Basis for Estimated Liabilities

The Standard Retiree Health Insurance Account (SRHIA) establishes claim liabilities based on estimates of the ultimate costs of claims (including future claim ad-

justment expenses) that have been reported but not settled and of claims that have been “incurred but not reported” (IBNR). The estimated claims liability was calculated by Butler, Partners, & Associates, PERS’ health insurance consultant, at June 30, 2017, using a variety of mathematical and statistical techniques and adjusted for actual experience to produce current estimates that reflect recent settlements, claim frequency, and other economic and social factors. Adjustments to claims liabilities are charged or credited to expense in the periods in which they are made. The estimated claims liability of \$8.7 million is carried at its face amount, and no interest discount is assumed. The IBNR portion represents an estimate for claims that have been incurred prior to June 30, 2017, but have not been reported to the SRHIA. Table 24 below shows the changes in the aggregated estimated claims liabilities as of June 30, 2017 and 2016.

TABLE 24

Changes in the Aggregated Estimated Claims Liabilities of SRHIA For the Year Ended June 30,		
	2017	2016
Total Estimated Claims at Beginning of Fiscal Year	\$ 9,200,000	\$ 14,798,000
Insured Claims and Claim Adjustment Expenses		
Provision for Insured Events of Current Fiscal Year	126,411,220	179,105,169
Increase/(Decrease) in Provision for Insured Events of Prior Years	6,689,450	(90,551)
Total Incurred Claims and Claim Adjustment Expenses	133,100,670	179,014,618
Payments		
Claims and Claim Adjustment Expenses Attributable to Insured Events of Current Fiscal Year	117,711,220	169,905,169
Claims and Claim Adjustment Expenses Attributable to Insured Events of Prior Fiscal Year	15,889,450	14,707,449
Total Payments	133,600,670	184,612,618
Total Estimated Claims at End of Fiscal Year	\$ 8,700,000	\$ 9,200,000

B. Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

The state of Oregon participates in PERS’ defined benefits plans, and PERS is an agency of the state. Pursuant to GASB Statement No. 68, *Accounting and Financial Reporting for Pensions – an amendment of GASB Statement No. 27*, a balance for a net pension liability has been allocated to the state of Oregon’s proprietary funds, including SRHIA. At June 30, 2017, SRHIA reported a liability of \$378,415 for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2016, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of December 31, 2014, rolled forward to June 30, 2016. SRHIA’s proportion of the net pension liability was based on a projection of SRHIA’s long-term share of contributions to the pension plan relative to the projected contributions of all participating enti-

TABLE 25

<u>Deferred Outflow of Resources and Deferred Inflow of Resources</u>		
<u>For the Year Ended June 30, 2017</u>		
	<u>Deferred Outflow of Resources</u>	<u>Deferred Inflow of Resources</u>
Differences between expected and actual experience	\$ 12,520	\$ —
Changes in assumptions	80,707	—
Net difference between projected and actual earnings on investments	74,759	—
Changes in proportion and differences between fund contributions and proportionate share of contributions	9,676	3,596
Contributions subsequent to the measurement date	24,718	—
Total	\$ <u>202,380</u>	\$ <u>3,596</u>

ties, actuarially determined. At June 30, 2017, SRHIA’s proportionate share of the statewide pension plan was 0.00939869 percent.

For the year ended June 30, 2017, SHRIA recognized a pension expense of \$92,352. Table 25 above shows the amounts SRHIA reported as deferred outflows of resources and deferred inflows of resources related to pensions at June 30, 2017.

The deferred outflows of resources totaling \$24,718 related to pensions resulting from SRHIA’s contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2017. Table 26 below displays the other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions that will be recognized in pension expense.

Note 10 - Employers’ Net Pension Liability

Actuarial Cost Method and Assumptions

The components of the net pension liability of the defined benefit pension plan are shown in Table 27 below.

The actuarial valuation calculations are based on the

benefits provided under the terms of the plan in effect at the time of each valuation and on the pattern of sharing of costs between the employer and plan members. The December 31, 2015 Actuarial Valuation was used to develop the GASB 67 financial reporting results for the Defined Benefit Pension Plan as of June 30, 2017.

Key actuarial methods and assumptions used to measure the total pension liability are illustrated in Table 28 on the next page.

Discount Rate

The discount rate used to measure the total pension liability was 7.50 percent for the Defined Benefit Pension Plan. The projection of cash flows used to determine the discount rate assumed that contributions from plan members and those of the contributing employers are made at the contractually required rates, as actuarially determined. Based on those assumptions, the pension plan’s fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments for the Defined Benefit Pension Plan was applied to all periods of projected benefit payments to determine the total pension liability.

TABLE 26

<u>Deferred Outflow of Resources and Deferred Inflow of Resources</u>	
<u>Will be recognized in Pension Expenses as follows:</u>	
Year ended June 30:	<u>Pension Expense</u>
2018	\$ 31,636
2019	31,636
2020	59,121
2021	45,102
2022	6,571
Thereafter	—
Total	\$ <u>174,066</u>

TABLE 27

<u>Net Pension Liability (in Millions)</u>	
<u>As of June 30, 2017</u>	
	<u>2017</u>
Total Pension Liability	\$ 79,851.7
Plan Fiduciary Net Position	<u>66,371.7</u>
Employers' Net Pension Liability	\$ <u>13,480.0</u>
Plan net position as a percentage of total pension liability	83.1 %

Sensitivity Analysis

Table 29 presented below presents the net pension liability calculated using the discount rate of 7.50 percent, as well as what the net pension liability would be if it were calculated using a discount rate that is one percent lower (6.50 percent) or one percent higher (8.50 percent) than the current rate. The results of actuarial valuations used for rate setting and the related Schedules of Funding Progress may be found in the Actuarial Section beginning on page 97.

Long-Term Expected Rate of Return

To develop an analytical basis for the selection of the long-term expected rate of return assumption, in July 2015 the PERS Board reviewed long-term assumptions developed by both Milliman’s capital market assumptions team and the Oregon Investment Council’s (OIC) investment advisors. Table 34 on page 69 shows Milliman’s assumptions for each of the asset classes in which the plan was invested at that time based on the OIC long-term target asset allocation. The OIC’s description of each as-

TABLE 28

<u>Actuarial Methods and Assumptions</u>	
	Pension
Valuation date	December 31, 2015
Measurement date	June 30, 2017
Experience Study	2014, published September 23, 2015
Actuarial assumptions:	
Actuarial cost method	Entry Age Normal
Inflation rate	2.50 percent
Long-term expected rate of return	7.50 percent
Discount rate	7.50 percent
Projected salary increases	3.50 percent
Cost of living adjustments (COLA)	Blend of 2.00% COLA and graded COLA (1.25%/0.15%) in accordance with <i>Moro</i> decision; blend based on service.
Mortality	<p>Healthy retirees and beneficiaries: RP-2000 Sex-distinct, generational per Scale BB, with collar adjustments and set-backs as described in the valuation.</p> <p>Active members: Mortality rates are a percentage of healthy retiree rates that vary by group, as described in the valuation.</p> <p>Disabled retirees: Mortality rates are a percentage (70% for males, 95% for females) of the RP-2000 Sex-distinct, generational per Scale BB, disabled mortality table.</p>

TABLE 29

<u>Sensitivity of Net Pension Liability to Changes in the Discount Rate (in Millions)</u>			
<u>As of June 30, 2017</u>			
Employers' Net Pension Liability	1% Decrease (6.50 %)	Current Discount Rate (7.50%)	1% Increase (8.50 %)
Defined Benefit Pension Plan	\$ 22,972.4	\$ 13,480.0	\$ 5,542.6

Oregon Public Employees Retirement System

set class was used to map the target allocation to the asset classes shown below. Each asset class assumption is based on a consistent set of underlying assumptions, and includes adjustment for the inflation assumption. These assumptions are not based on historical returns, but instead are based on a forward-looking capital market economic model.

Depletion Date Projection

GASB 67 generally requires that a blended discount rate be used to measure the Total Pension Liability (the Actuarial Accrued Liability calculated using the Individual Entry Age Normal Cost Method). The long-term expected return on plan investments may be used to discount liabilities to the extent that the plan's Fiduciary Net Position (fair market value of assets) is projected to cover benefit payments and administrative expenses. A 20-year high quality (AA/Aa or higher) municipal bond rate must be used for periods where the Fiduciary Net Position is not projected to cover benefit payments and administrative expenses. Determining the discount rate under GASB 67 will often require that the actuary perform complex projections of future benefit payments and asset values. GASB 67 (paragraph 43) does allow for alternative evaluations of projected solvency, if such evaluation can reliably be made. GASB does not contemplate a specific method for making an alternative evaluation of sufficiency; it is left to professional judgment.

The following circumstances justify an alternative evaluation of sufficiency for Oregon PERS:

- Oregon PERS has a formal written policy to calculate an Actuarially Determined Contribution (ADC), which is articulated in the actuarial valuation report.
- The ADC is based on a closed, layered amortization period, which means that payment of the full ADC each year will bring the plan to a 100 percent funded position by the end of the amortization period if future experience follows assumption.
- GASB 67 specifies that the projections regarding future solvency assume that plan assets earn the

assumed rate of return and there are no future changes in the plan provisions or actuarial methods and assumptions, which means that the projections would not reflect any adverse future experience which might impact the plan's funded position.

Based on these circumstances, it is our third-party actuary's opinion that the detailed depletion date projections outlined in GASB 67 would clearly indicate that the Fiduciary Net Position is always projected to be sufficient to cover benefit payments and administrative expenses.

Note 11 - Employers' Net OPEB Liability/ (Asset)

Actuarial Cost Method and Assumptions

The components of the Net OPEB liability (asset) for the OPEB plans are shown below in Table 30.

The actuarial valuation calculations are based on the benefits provided under the terms of the plan in effect at the time of each valuation and on the pattern of sharing of costs between the employer and plan members as of the December 31, 2015 valuation rolled forward to June 30, 2017.

Key actuarial methods and assumptions used to measure the total OPEB liability are illustrated in Table 31 on page 68.

Discount Rate

The discount rate used to measure the total OPEB liability was 7.50 percent for the OPEB Plans. The projection of cash flows used to determine the discount rate assumed that contributions from contributing employers are made at the contractually required rates, as actuarially determined. Based on those assumptions, the OPEB plans' fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments for the OPEB Plans was applied

TABLE 30

<u>Net OPEB - RHIA (Asset) (in Millions)</u>		<u>Net OPEB - RHIPA Liability (in Millions)</u>	
<u>As of June 30, 2017</u>		<u>As of June 30, 2017</u>	
	<u>2017</u>		<u>2017</u>
Total OPEB - RHIA Liability	\$ 470.0	Total OPEB - RHIPA Liability	\$ 70.9
Plan Fiduciary Net Position	<u>511.8</u>	Plan Fiduciary Net Position	<u>24.3</u>
Employers' Net OPEB - RHIA (Asset)	\$ <u>(41.8)</u>	Employer's Net OPEB - RHIPA Liability	\$ <u>46.6</u>
Plan net position as a percentage of		Plan net position as a percentage of	
Total OPEB - RHIA Liability	108.9 %	Total OPEB - RHIPA Liability	34.3 %

to all periods of projected benefit payments to determine the total OPEB liability.

Sensitivity Analysis

Table 32 on the next page presents the net OPEB liability/(asset) calculated using the discount rate of 7.50 percent, as well as what the net OPEB liability/(asset) would be if it were calculated using a discount rate that is one percent lower (6.50 percent) or one percent higher (8.50 percent) than the current rate. The results of actuarial valuations used for rate setting and the related Schedules of Funding Progress may be found in the Actuarial Section beginning on page 97.

Table 33 on the next page presents the net OPEB liability/(asset) calculated using the current healthcare cost trend rates, as well as what the net OPEB liability/(asset) would be if it were calculated using healthcare trend rates that are 1 percentage point lower, or one percentage point higher than the current rates.

Long-Term Expected Rate of Return

To develop an analytical basis for the selection of the long-term expected rate of return assumption, in July 2015 the PERS Board reviewed long-term assumptions developed by both Milliman's capital market assumptions team and the Oregon Investment Council's (OIC) investment advisors. Table 34 on page 69 shows Milliman's assumptions for each of the asset classes in which the plans were invested at that time based on the OIC long-term target asset allocation. The OIC's description of each asset class was used to map the target allocation to the asset classes shown below. Each asset class assumption is based on a consistent set of underlying assumptions, and includes adjustment for the inflation assumption. These assumptions are not based on historical returns, but instead are based on a forward-looking capital market economic model.

Depletion Date Projection

GASB 74 generally requires that a blended discount rate be used to measure the Total OPEB Liability (the Actuarial Accrued Liability calculated using the Individual Entry Age Normal Cost Method). The long-term expected return on plan investments may be used to discount liabilities to the extent that the plan's Fiduciary Net Position (fair market value of assets) is projected to cover benefit payments and administrative expenses. A 20-year high quality (AA/Aa or higher) municipal bond rate must be used for periods where the Fiduciary Net Position is not projected to cover benefit payments and administrative expenses. Determining the discount rate under GASB 74 will often require that the actuary perform complex projections of future benefit payments and asset values. GASB 74 (paragraph 51) does allow for alternative evaluations of

projected solvency, if such evaluation can reliably be made. GASB does not contemplate a specific method for making an alternative evaluation of sufficiency; it is left to professional judgment.

The following circumstances justify an alternative evaluation of sufficiency for Oregon PERS:

- Oregon PERS has a formal written policy to calculate an Actuarially Determined Contribution (ADC), which is articulated in the actuarial valuation report.
- The ADC is based on a closed, layered amortization period, which means that payment of the full ADC each year will bring the plan to a 100 percent funded position by the end of the amortization period if future experience follows assumption.
- GASB 74 specifies that the projections regarding future solvency assume that plan assets earn the assumed rate of return and there are no future changes in the plan provisions or actuarial methods and assumptions, which means that the projections would not reflect any adverse future experience which might impact the plan's funded position.

Based on these circumstances, it is our third-party actuary's opinion that the detailed depletion date projections outlined in GASB 74 would clearly indicate that the Fiduciary Net Position is always projected to be sufficient to cover benefit payments and administrative expenses.

Note 12 – Subsequent Event

The PERS Board reviews the discount rate in odd-numbered years as part of the Board's adoption of actuarial methods and assumptions. That rate is then adopted in an administrative rule at the time the Board sets the new rate. On July 28, 2017, the PERS Board adopted a 7.20% assumed rate.

The rule specifies that the adopted assumed rate will be effective for PERS transactions with an effective date of January 1, 2018, consistent with this Board's policy decision from 2013 that the assumed rate will be effective January 1 following the Board's adoption of the rate. A January 1 effective date also provides equitable treatment to all members who retire in a year that a change is adopted, no matter which month they retire. The adopted assumed rate will be aligned with the new actuarial equivalency factors (AEFs), which will allow for a clear effective date for all transactions that involve calculations using both the rate and AEF components.

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TABLE 31

<u>Actuarial Methods and Assumptions</u>	<u>RHIA</u>	<u>RHIPA</u>
Valuation date	December 31, 2015	December 31, 2015
Measurement date	June 30, 2017	June 30, 2017
Experience Study	2014, published September 23, 2015	2014, published September 23, 2015
Actuarial assumptions:		
Actuarial cost method	Entry Age Normal	Entry Age Normal
Inflation rate	2.50 percent	2.50 percent
Long-term expected rate of return	7.50 percent	7.50 percent
Discount rate	7.50 percent	7.50 percent
Projected salary increases	3.50 percent	3.50 percent
Retiree healthcare participation	Healthy retirees: 38%; Disabled retirees: 20%	Varies by service at decrement, increasing from 10% at eight years of service to 38% at 30 years of service.
Healthcare cost trend rate	Not applicable	Applied at beginning of plan year, starting with 6.3% for 2016, decreasing to 5.3% for 2019, increasing to 6.5% for 2029, and decreasing to an ultimate rate of 4.4% for 2094 and beyond.
Mortality	<p>Healthy retirees and beneficiaries: RP-2000 Sex-distinct, generational per Scale BB, with collar adjustments and set-backs as described in the valuation.</p> <p>Active members: Mortality rates are a percentage of healthy retiree rates that vary by group, as described in the valuation.</p> <p>Disabled retirees: Mortality rates are a percentage (70% for males, 95% for females) of the RP-2000 Sex-distinct, generational per Scale BB, disabled mortality table.</p>	<p>Healthy retirees and beneficiaries: RP-2000 Sex-distinct, generational per Scale BB, with collar adjustments and set-backs as described in the valuation.</p> <p>Active members: Mortality rates are a percentage of healthy retiree rates that vary by group, as described in the valuation.</p> <p>Disabled retirees: Mortality rates are a percentage (70% for males, 95% for females) of the RP-2000 Sex-distinct, generational per Scale BB, disabled mortality table.</p>

TABLE 32

<u>Sensitivity of Net OPEB Liability/(Asset) to Changes in the Discount Rate (in Millions)</u>			
<u>As of June 30, 2017</u>			
<u>Employers' Net OPEB Liability/(Asset)</u>	<u>1% Decrease (6.50 %)</u>	<u>Current Discount Rate (7.50%)</u>	<u>1% Increase (8.50 %)</u>
Other Postemployment Benefit Plan - RHIA	\$ 5.8	\$ (41.8)	\$ (82.2)
Other Postemployment Benefit Plan - RHIPA	\$ 51.5	\$ 46.6	\$ 42.1

TABLE 33

<u>Sensitivity of Net OPEB Liability/(Asset) to Changes in the Healthcare Cost Trend Rate (in Millions)</u>			
<u>As of June 30, 2017</u>			
<u>Employers' Net OPEB Liability/(Asset)</u>	<u>1% Decrease</u>	<u>Current Trend Rate</u>	<u>1% Increase</u>
Other Postemployment Benefit Plan - RHIA	\$ (41.8)	\$ (41.8)	\$ (41.8)
Other Postemployment Benefit Plan - RHIPA	\$ 40.3	\$ 46.6	\$ 53.9

TABLE 34

<u>Long-Term Expected Rate of Return</u>				
Asset Class	Target Allocation*	Annual Arithmetic Return	Compound Annual (Geometric) Return	Standard Deviation
Core Fixed Income	8.00 %	4.10 %	4.00 %	4.68 %
Short-Term Bonds	8.00	3.65	3.61	2.74
Bank/Leveraged Loans	3.00	5.69	5.42	7.82
High Yield Bonds	1.00	6.67	6.20	10.28
Large/Mid Cap US Equities	15.75	7.96	6.70	17.07
Small Cap US Equities	1.31	8.93	6.99	21.35
Micro Cap US Equities	1.31	9.37	7.01	23.72
Developed Foreign Equities	13.13	8.34	6.73	19.40
Emerging Market Equities	4.12	10.56	7.25	28.45
Non-US Small Cap Equities	1.88	9.01	7.22	20.55
Private Equity	17.50	11.60	7.97	30.00
Real Estate (Property)	10.00	6.48	5.84	12.00
Real Estate (REITS)	2.50	8.74	6.69	22.02
Hedge Fund of Funds – Diversified	2.50	4.94	4.64	8.09
Hedge Fund – Event-driven	0.63	7.07	6.72	8.90
Timber	1.88	6.60	5.85	13.00
Farmland	1.88	7.11	6.37	13.00
Infrastructure	3.75	8.31	7.13	16.50
Commodities	1.88	6.07	4.58	18.40
Assumed Inflation - Mean			2.50 %	1.85 %

* Based on the OIC Statement of Investment Objectives and Policy Framework for the Oregon Public Employees Retirement Fund, revised as of December 3, 2014. The revised allocation was adopted at the June 3, 2015 OIC meeting.

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Required Supplementary Information

Schedule of Changes in Net Pension Liability/(Asset) and Related Ratios (Unaudited)

Defined Benefit Pension Plan

For the Fiscal Year Ended June 30,¹

(amounts in millions)

	2017	2016	2015	2014
Total Pension Liability ²				
Service Cost	\$ 1,105.5	\$ 1,016.8	\$ 960.9	\$ 1,020.3
Interest on Total Pension Liability	5,662.2	5,355.3	4,779.5	4,819.4
Changes in Benefit Terms	-	-	5,353.5	(2,423.6)
Changes in Assumptions	-	3,946.4	-	-
Differences Between Expected and Actual Experience	351.8	317.3	380.0	-
Benefit Payments	(4,362.2)	(4,206.5)	(3,943.6)	(3,863.4)
Net Change in Total Pension Liability	2,757.3	6,429.3	7,530.3	(447.3)
Total Pension Liability - Beginning	77,094.4	70,665.1	63,134.8	63,582.1
Total Pension Liability - Ending	<u>\$ 79,851.7</u>	<u>\$ 77,094.4</u>	<u>\$ 70,665.1</u>	<u>\$ 63,134.8</u>
Plan Fiduciary Net Position				
Employer Contributions	\$ 1,022.2	\$ 977.3	\$ 1,123.3	\$ 915.2
Member Contributions	13.1	14.2	13.8	15.3
Net Investment and Other Income	7,660.0	413.9	2,364.5	9,886.6
Benefit Payments	(4,362.2)	(4,193.3)	(3,927.2)	(3,837.8)
Refunds of Member Accounts	-	(13.1)	(16.5)	(25.6)
Administrative Expense	(43.5)	(40.5)	(35.7)	(31.2)
Net Change in Plan Fiduciary Net Position	4,289.6	(2,841.5)	(477.8)	6,922.5
Plan Fiduciary Net Position - Beginning	62,082.1	64,923.6	65,401.4	58,478.9
Plan Fiduciary Net Position - Ending	<u>\$ 66,371.7</u>	<u>\$ 62,082.1</u>	<u>\$ 64,923.6</u>	<u>\$ 65,401.4</u>
Net Pension Liability/(Asset)	13,480.0	15,012.3	5,741.5	(2,266.6)
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	83.1 %	80.5 %	91.9 %	103.6 %
Covered Payroll	10,037.5	9,428.4	9,000.2	8,701.7
Net Pension Liability/(Asset) as a Percentage of Covered Payroll	134.3 %	159.2 %	63.8 %	(26.0) %

¹ 10-year trend information will be disclosed prospectively² See Table 28 for Actuarial Methods and Assumptions**Changes in Benefit Terms and Assumptions:**

Benefit Terms: The 2013 Oregon Legislature made a series of changes to PERS that lowered projected future benefit payments from the System. These changes included reductions to future Cost of Living Adjustments (COLA) made through Senate Bills 822 and 861. Senate Bill 822 also required the contribution rates scheduled to be in effect from July 2013 to June 2015 to be reduced. The Oregon Supreme Court decision in *Moro v. State of Oregon*, issued on April 30, 2015, reversed a significant portion of the reductions the 2013 Oregon Legislature made to future System Cost of Living Adjustments (COLA) through Senate Bills 822 and 861. This reversal increased the total pension liability as of June 30, 2015 compared to June 30, 2014 total pension liability.

Assumptions: The PERS Board adopted assumption changes that were used to measure the June 30, 2016 total pension liability. The changes include the lowering of the long-term expected rate of return to 7.50 percent and lowering of the assumed inflation to 2.50 percent. In addition, the healthy mortality assumption was changed to reflect an updated mortality improvement scale for all groups, and assumptions were updated for merit increases, unused sick leave, and vacation pay were updated.

Required Supplementary Information

Schedule of Investment Returns (Unaudited)

Defined Benefit Pension Plan

For the Fiscal Year Ended June 30¹

	2017	2016	2015	2014
Annual Money-Weighted Rate of Return Net of Investment Expense	11.8%	1.6%	3.7%	17.2%

¹ 10-year trend information will be disclosed prospectively

Oregon Public Employees Retirement System

Required Supplementary Information

Schedule of Defined Benefit Pension Plan Employer Contributions³ (Unaudited)

Last 10 Fiscal Years

(Dollar amounts in thousands)

	2017	2016	2015	2014
Actuarially determined contributions ¹	\$ 960,254	\$ 941,321	\$ 909,912	\$ 866,635
Contributions in relation to the actuarially determined contributions ²	960,254	941,321	909,912	866,635
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 10,037,542	\$ 9,428,447	\$ 9,000,246	\$ 8,701,657
Contributions as a percentage of covered payroll	9.57%	9.98%	10.11%	9.96%

Notes:

¹ The actuarially determined contributions on this Schedule of Defined Benefit Pension Plan Contributions have been adjusted to remove contribution requirements related to employer-specific liabilities.

² Employer contributions on the Statement of Changes in Fiduciary Net Position include interest related to employer-specific liabilities and employers' optional supplemental contributions.

³ For Actuarial Assumptions and Methods, see table below.

Actuarial Assumptions and Methods Used to Set the Actuarially Determined Contributions

Actuarial Valuation:	December 31, 2013	December 31, 2011
Effective:	July 2015 - June 2017	July 2013 - June 2015
Actuarial cost method:	Entry Age Normal	Projected Unit Credit
Amortization method:	Level percentage of payroll	Level percentage of payroll
Asset valuation method:	Market value	Market value
Remaining amortization periods:	20 years	N/A
Actuarial assumptions:		
Inflation rate	2.75 percent	2.75 percent
Projected salary increases	3.75 percent	3.75 percent
Investment rate of return	7.75 percent	8.00 percent

2013	2012	2011	2010	2009	2008
\$ 781,015	\$ 774,461	\$ 361,655	\$ 377,778	\$ 592,546	\$ 552,242
781,015	774,461	361,655	377,778	592,546	552,242
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 8,280,731	\$ 8,650,799	\$ 8,618,636	\$ 8,451,349	\$ 8,281,261	\$ 7,733,970
9.43%	8.95%	4.20%	4.47%	7.16%	7.14%

December 31, 2009	December 31, 2007	December 31, 2005
July 2011 - June 2013	July 2009 - June 2011	July 2007 - June 2009
Projected Unit Credit	Projected Unit Credit	Projected Unit Credit
Level percentage of payroll	Level percentage of payroll	Level percentage of payroll
Market value	Market value	Market value
N/A	20 years	22 years
2.75 percent	2.75 percent	2.75 percent
3.75 percent	3.75 percent	3.75 percent
8.00 percent	8.00 percent	8.00 percent

Oregon Public Employees Retirement System

Required Supplementary Information

Schedule of Changes in Net OPEB (Asset) and Related Ratios (Unaudited)

Other Postemployment Benefit Plans - RHIA

For the Fiscal Year Ended June 30,¹

(amounts in millions)

	<u>2017</u>
Total OPEB Liability²	
Service Cost	\$ 3.4
Interest on Total OPEB Liability	33.8
Changes in Benefit Terms	-
Changes in Assumptions	-
Differences Between Expected and Actual Experience	-
Benefit Payments	<u>(31.2)</u>
Net Change in Total OPEB Liability	6.0
Total OPEB Liability - Beginning	464.0
Total OPEB Liability - Ending	<u>\$ 470.0</u>
Plan Fiduciary Net Position	
Employer Contributions	\$ 49.8
Net Investment and Other Income	57.6
Benefit Payments	(31.2)
Administrative Expense	<u>(1.3)</u>
Net Change in Plan Fiduciary Net Position	74.9
Plan Fiduciary Net Position - Beginning	436.9
Plan Fiduciary Net Position - Ending	<u>\$ 511.8</u>
Net OPEB (Asset)	(41.8)
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	108.9 %
Covered Payroll	4,570.1
Net OPEB (Asset) as a Percentage of Covered Payroll	(0.91) %

¹ 10-year trend information will be disclosed prospectively

² See Table 31 for Actuarial Methods and Assumptions

Required Supplementary Information

Schedule of Investment Returns (Unaudited)

Other Postemployment Benefit Plans - RHIA

For the Fiscal Year Ended June 30¹

	2017
Annual Money-Weighted Rate of Return Net of Investment Expense	12.5%

¹ 10-year trend information will be disclosed prospectively

Required Supplementary Information
Schedule of Changes in Net OPEB Liability and Related Ratios (Unaudited)
Other Postemployment Benefit Plans - RHIPA
For the Fiscal Year Ended June 30,¹
(amounts in millions)

	<u>2017</u>
Total OPEB Liability²	
Service Cost	\$ 1.5
Interest on Total OPEB Liability	5.0
Changes in Benefit Terms	-
Changes in Assumptions	-
Differences Between Expected and Actual Experience	-
Benefit Payments	<u>(4.3)</u>
Net Change in Total OPEB Liability	2.2
Total OPEB Liability - Beginning	68.7
Total OPEB Liability - Ending	<u>\$ 70.9</u>
Plan Fiduciary Net Position	
Employer Contributions	\$ 11.9
Net Investment and Other Income	2.0
Benefit Payments	(4.3)
Administrative Expense	<u>(0.3)</u>
Net Change in Plan Fiduciary Net Position	9.3
Plan Fiduciary Net Position - Beginning	15.0
Plan Fiduciary Net Position - Ending	<u>\$ 24.3</u>
Net OPEB Liability	46.6
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	34.3 %
Covered Payroll	1,327.1
Net OPEB Liability as a Percentage of Covered Payroll	3.51 %

¹ 10-year trend information will be disclosed prospectively

² See Table 31 for Actuarial Methods and Assumptions

Required Supplementary Information
Schedule of Investment Returns (Unaudited)
Other Postemployment Benefit Plans - RHIPA
For the Fiscal Year Ended June 30¹

	2017
Annual Money-Weighted Rate of Return Net of Investment Expense	14.3%

¹ 10-year trend information will be disclosed prospectively

Oregon Public Employees Retirement System

Required Supplementary Information

Schedule of OPEB - RHIA Employer Contributions¹ (Unaudited)

Last 10 Fiscal Years

(Dollar amounts in thousands)

	2017	2016	2015	2014
Actuarially determined contributions ¹	\$ 49,786	\$ 44,588	\$ 53,648	\$ 48,253
Contributions in relation to the actuarially determined contributions	49,786	44,588	53,648	48,253
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 10,037,542	\$ 9,428,447	\$ 9,000,246	\$ 8,686,772
Contributions as a percentage of covered payroll	0.50%	0.47%	0.60%	0.56%

Note:

¹ For Actuarial Assumptions and Methods, see table below.

Actuarial Assumptions and Methods Used to Set the Actuarially Determined Contributions

Actuarial Valuation:	December 31, 2013	December 31, 2011
Effective:	July 2015 - June 2017	July 2013 - June 2015
Actuarial cost method:	Entry Age Normal	Projected Unit Credit
Amortization method:	Level percentage of payroll, closed	Level percentage of payroll, closed
Amortization Period:	10 years	10 years
Asset valuation method:	Market value	Market value
Remaining amortization periods:	20 years	N/A
Actuarial assumptions:		
Inflation rate	2.75 percent	2.75 percent
Healthcare cost trend rates	None. Statute stipulates \$60 monthly payment for healthcare insurance.	None. Statute stipulates \$60 monthly payment for healthcare insurance.
Projected salary increases	3.75 percent	3.75 percent
Investment rate of return	7.75 percent	8.00 percent

Oregon Public Employees Retirement System

2013	2012	2011	2010	2009	2008
\$ 47,294	\$ 46,465	\$ 22,177	\$ 22,351	\$ 28,813	\$ 27,783
47,294	46,465	22,177	22,351	28,813	27,783
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 8,280,731	\$ 8,650,799	\$ 8,618,636	\$ 8,451,349	\$ 8,281,261	\$ 7,735,780
0.57%	0.54%	0.26%	0.26%	0.35%	0.36%

December 31, 2009	December 31, 2007	December 31, 2005
July 2011 - June 2013	July 2009 - June 2011	July 2007 - June 2009
Projected Unit Credit	Projected Unit Credit	Projected Unit Credit
Level percentage of payroll, closed 10 years	Level percentage of payroll, closed N/A	Level percentage of payroll, closed N/A
Market value N/A	Market value 20 years	Market value 22 years
2.75 percent	2.75 percent	2.75 percent
None. Statute stipulates \$60 monthly payment for healthcare insurance.	None. Statute stipulates \$60 monthly payment for healthcare insurance.	None. Statute stipulates \$60 monthly payment for healthcare insurance.
3.75 percent	3.75 percent	3.75 percent
8.00 percent	8.00 percent	8.00 percent

Oregon Public Employees Retirement System

Required Supplementary Information

Schedule of OPEB - RHIPA Employer Contributions¹ (Unaudited)

Last 10 Fiscal Years

(Dollar amounts in thousands)

	2017	2016	2015	2014
Actuarially determined contributions ¹	\$ 11,864	\$ 10,967	\$ 6,887	\$ 6,150
Contributions in relation to the actuarially determined contributions	11,864	10,967	6,887	6,150
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -
Covered payroll	\$ 3,024,383	\$ 2,850,753	\$ 2,737,792	\$ 2,566,555
Contributions as a percentage of covered payroll	0.39%	0.38%	0.25%	0.24%

Note:

¹ For Actuarial Assumptions and Methods, see table below.

Actuarial Assumptions and Methods Used to Set the Actuarially Determined Contributions

Actuarial Valuation:	December 31, 2013	December 31, 2011
Effective:	July 2015 - June 2017	July 2013 - June 2015
Actuarial cost method:	Entry Age Normal	Projected Unit Credit
Amortization method:	Level percentage of payroll, closed	Level percentage of payroll, closed
Amortization Period:	10 years	10 years
Asset valuation method:	Market value	Market value
Remaining amortization periods:	20 years	N/A
Actuarial assumptions:		
Inflation rate	2.75 percent	2.75 percent
Healthcare cost trend rates	Graded from 6.1 percent in 2014 to 4.7 percent in 2083.	Graded from 6.9 percent in 2012 to 4.5 percent in 2029
Projected salary increases	3.75 percent	3.75 percent
Investment rate of return	7.75 percent	8.00 percent

Oregon Public Employees Retirement System

2013	2012	2011	2010	2009	2008
\$ 3,444	\$ 3,378	\$ 1,428	\$ 1,497	\$ 2,005	\$ 1,791
3,444	3,378	1,428	1,497	2,005	1,791
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 2,422,404	\$ 2,563,850	\$ 2,374,856	\$ 2,353,312	\$ 2,298,483	\$ 2,062,019
0.14%	0.13%	0.06%	0.06%	0.09%	0.09%

December 31, 2009	December 31, 2007	December 31, 2005
July 2011 - June 2013	July 2009 - June 2011	July 2007 - June 2009
Projected Unit Credit	Projected Unit Credit	Projected Unit Credit
Level percentage of payroll, closed 10 years	Level percentage of payroll, closed N/A	Level percentage of payroll, closed N/A
Market value N/A	Market value 20 years	Market value 22 years
2.75 percent	2.75 percent	2.75 percent
Graded from 7.0 percent in 2010 to 4.5 percent in 2029	Graded from 8.0 percent in 2008 to 5.0 percent in 2013	Graded from 9.0 percent in 2007 to 5.0 percent in 2013
3.75 percent	3.75 percent	3.75 percent
8.00 percent	8.00 percent	8.00 percent

Oregon Public Employees Retirement System

**Required Supplementary Information
Schedule of Claims Development Information (Unaudited)
Standard Retiree Health Insurance Account
Fiscal and Policy Year Ended (In Millions)¹**

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
1. Net earned required contribution and investment revenues	\$ 174.19	\$ 188.99	\$ 195.59	\$ 198.85	\$ 226.61	\$ 197.92	\$ 157.55
2. Unallocated expenses	20.01	22.15	25.00	29.00	32.09	26.30	16.55
3. Estimated incurred claims and expense, end of policy year	152.55	150.62	172.89	175.41	212.21	179.01	133.10
4. Paid (cumulative) as of:							
End of policy year	150.42	160.15	172.76	175.01	211.90	184.61	133.60
One year later	161.43	171.80	185.22	192.78	226.61	200.50	
Two years later	161.34	171.68	185.21	192.81	226.61		
Three years later	161.27	171.66	185.20	192.81			
Four years later	161.25	171.66	185.20				
Five years later	161.27	171.66					
Six years later	161.27						
Seven years later							
Eight years later							
Nine years later							
5. Reestimated incurred claims and expense:							
End of policy year	152.55	150.62	172.89	175.41	212.21	179.01	133.10
One year later	163.56	162.27	185.35	193.18	226.92	194.90	
Two years later	163.47	162.20	185.34	193.21	226.92		
Three years later	163.35	162.17	185.33	193.21			
Four years later	163.34	162.17	185.33				
Five years later	163.35	162.17					
Six years later	163.35						
Seven years later							
Eight years later							
Nine years later							
6. Increase (decrease) in estimated incurred claims and expense from end of policy	10.79	11.58	12.46	17.77	14.71	15.89	-

¹ 10-year trend information will be disclosed prospectively.

Oregon Public Employees Retirement System

Other Supplementary Information
Schedule of Plan Fiduciary Net Position
Defined Benefit Pension Plan
As of June 30, 2017

	Oregon Public Service Retirement Plan			
	Regular Account	Pension Program	Variable Account	Total
Assets:				
Cash and Cash Equivalents	\$ 2,567,015,507	\$ 210,174,462	\$ 9,720,853	\$ 2,786,910,822
Receivables:				
Employer	63,108,607	-	-	63,108,607
Interest and Dividends	115,546,403	6,467,241	-	122,013,644
Investment Sales and Other Receivables	1,394,914,461	75,619,475	-	1,470,533,936
Transitional Liability	537,321,121	-	-	537,321,121
Total Receivables	<u>2,110,890,592</u>	<u>82,086,716</u>	<u>-</u>	<u>2,192,977,308</u>
Interaccount Receivables and Payables	25,991,898	(18,891,753)	(7,100,145)	-
Due from Other Funds	1,047,007	-	-	1,047,007
Investments:				
Debt Securities	12,243,722,972	685,292,738	-	12,929,015,710
Public Equity	23,519,421,689	1,316,404,245	584,074,189	25,419,900,123
Real Estate	7,267,555,147	406,771,925	-	7,674,327,072
Private Equity	12,517,872,836	700,637,165	-	13,218,510,001
Alternative Equity	3,449,888,259	193,093,504	-	3,642,981,763
Opportunity Portfolio	1,323,489,620	74,076,964	-	1,397,566,584
Total Investments	<u>60,321,950,523</u>	<u>3,376,276,541</u>	<u>584,074,189</u>	<u>64,282,301,253</u>
Securities Lending Cash Collateral	1,370,846,845	76,861,644	34,143	1,447,742,632
Prepaid Expenses	7,978,412	379,395	-	8,357,807
Capital Assets at Cost, Net	27,230,148	2,158,560	-	29,388,708
Total Assets	<u>66,432,950,932</u>	<u>3,729,045,565</u>	<u>586,729,040</u>	<u>70,748,725,537</u>
Liabilities:				
Investment Purchases and Accrued Expenses	2,748,800,452	134,458,785	3,455,879	2,886,715,116
Deposits and Other Liabilities	31,749,063	402,031	18,497	32,169,591
Due to Other Funds	9,957,084	-	-	9,957,084
Securities Lending Cash Collateral Due Borrowers	1,371,261,503	76,884,853	34,143	1,448,180,499
Total Liabilities	<u>4,161,768,102</u>	<u>211,745,669</u>	<u>3,508,519</u>	<u>4,377,022,290</u>
Net Position Restricted for Pension Benefits	<u>\$ 62,271,182,830</u>	<u>\$ 3,517,299,896</u>	<u>\$ 583,220,521</u>	<u>\$ 66,371,703,247</u>

Oregon Public Employees Retirement System

Other Supplementary Information

Schedule of Changes in Plan Fiduciary Net Position

Defined Benefit Pension Plan

For the Fiscal Year Ended June 30, 2017

	Oregon Public Service Retirement Plan			Total
	Regular Account	Pension Program	Variable Account	
Additions:				
Contributions:				
Employer	\$ 554,882,977	\$ 467,318,272	\$ –	\$ 1,022,201,249
Plan Member	13,004,645	–	173,339	13,177,984
Total Contributions	<u>567,887,622</u>	<u>467,318,272</u>	<u>173,339</u>	<u>1,035,379,233</u>
Investment Income:				
Net Appreciation (Depreciation) in Fair Value of Investments	6,327,685,976	342,641,250	108,472,308	6,778,799,534
Interest, Dividends and Other Investment Income	1,406,639,753	77,350,995	98,339	1,484,089,087
Total Investment Income	<u>7,734,325,729</u>	<u>419,992,245</u>	<u>108,570,647</u>	<u>8,262,888,621</u>
Less Investment Expense	584,765,704	32,327,786	349,119	617,442,609
Net Investment Income	<u>7,149,560,025</u>	<u>387,664,459</u>	<u>108,221,528</u>	<u>7,645,446,012</u>
Securities Lending Income:				
Securities Lending Income	18,848,884	974,199	4,798	19,827,881
Less Securities Lending Expense	<u>(8,799,787)</u>	<u>(474,723)</u>	<u>(4,798)</u>	<u>(9,279,308)</u>
Net Securities Lending Income	10,049,097	499,476	–	10,548,573
Other Income	4,058,440	2,550	–	4,060,990
Total Additions	<u>7,731,555,184</u>	<u>855,484,757</u>	<u>108,394,867</u>	<u>8,695,434,808</u>
Deductions				
Benefits	4,287,133,224	20,984,102	33,480,811	4,341,598,137
Death Benefits	4,684,598	–	–	4,684,598
Refunds of Contributions	15,732,351	–	229,393	15,961,744
Administrative Expense	35,849,366	6,348,248	1,348,570	43,546,184
Interaccount Transfers	<u>(85,323,349)</u>	<u>–</u>	<u>85,323,349</u>	<u>–</u>
Total Deductions	<u>4,258,076,190</u>	<u>27,332,350</u>	<u>120,382,123</u>	<u>4,405,790,663</u>
Net Increase	3,473,478,994	828,152,407	(11,987,256)	4,289,644,145
Net Position Restricted for Pension Benefits				
Beginning of Year	58,797,703,836	2,689,147,489	595,207,777	62,082,059,102
End of Year	<u>\$ 62,271,182,830</u>	<u>\$ 3,517,299,896</u>	<u>\$ 583,220,521</u>	<u>\$ 66,371,703,247</u>

Other Supplementary Information
Schedule of Administrative Expenses - All Funds
For the Fiscal Year Ended June 30, 2017

Personal Services:

Staff Salaries	\$ 21,823,666
Social Security	1,637,270
Retirement	3,909,690
Unemployment Compensation	28,592
Worker Compensation	9,873
Insurance	5,285,545
Assessments	137,936
Total Personal Services	<u>32,832,572</u>

Professional Services:

Actuarial	527,775
Data Processing	15,517
Audit	8,599
Legal Counsel	1,334,568
Medical Consultants	224,532
Training and Recruitment	265,293
Contract Services	7,209,946
Healthcare Fees	16,638,162
Total Professional Services	<u>26,224,392</u>

Communications:

Printing	98,324
Telephone	161,966
Postage	634,179
Travel	187,803
Total Communication	<u>1,082,272</u>

Rentals:

Office Space	374,934
Equipment	14,180
Total Rentals	<u>389,114</u>

Miscellaneous:

Central Government Charges	5,355,223
Supplies	1,494,042
Maintenance	934,033
Non-Capitalized Equipment	1,436,562
Depreciation	2,682,772
Other	32,462
Total Miscellaneous	<u>11,935,094</u>

Total Administrative Expenses: \$ 72,463,444

Oregon Public Employees Retirement System

Other Supplementary Information

Schedule of Payment to Consultants and Contractors

For the Fiscal Year Ended June 30, 2017

Individual or Firm	Commission/Fees	Nature of Service
Milliman Inc	\$ 527,775	Actuarial
Macias Gini & O'Connell LLP	464,096	Audit
Oregon Audits Division	4,114	Audit
CEM Benchmarking	45,000	Benchmarking
Butler Partners & Associates LLC	189,532	Health Insurance
BenefitHelp Solutions	3,353,922	Health Insurance
ODS Health Plan Inc	13,283,612	Health Insurance
Voya	2,380,570	IAP Administration
Language Line Solutions Inc	254	Language Translation
Ice Miller LLP	12,905	Legal
Bennett Hartman Morris & Kaplan LLP	911,123	Legal
Oregon Department of Justice	283,195	Legal
Frederick William Miller MD	35,000	Medical
Sjoberg Evashenk Consulting	36,300	Performance Audit
Oregon State Police	4,485	Security
Charles W Cammack Associates Inc	85,000	Technology
Gartner Group Inc	196,908	Technology
Gov Delivery LLC	3,605	Technology
LexisNexis Risk Data Management Inc	8,772	Technology
HP Enterprise Services	379,304	Technology
MMC Systems Inc	2,685,366	Technology
Strategic Solutions NW LLC	1,400	Technology
U Work Com Inc	358,886	Technology
Oregon Department of Human Services	17,958	Vital Records

Oregon Public Employees Retirement System

Other Supplementary Information
Summary of Investment Fees, Commissions, and Expenses
For the Year Ended June 30, 2017

	2017		2017
Debt Securities Managers		Private Equity Portfolio Managers (continued)	
AllianceBernstein L.P.	\$ 2,193,484	KKR European Fund III	\$ 1,759,454
BlackRock Asset Management	2,289,272	KKR North America Fund XI	7,979,396
KKR Financial Credit Portfolio	6,930,031	KSL Capital Partners IV	2,625,000
Oak Hill Advisors	6,901,088	MBK Partners Fund IV	1,283,048
Wellington Management Company, LLP	1,911,743	MHR Institutional Partners IV	2,625,000
Western Asset Management Company	2,005,148	North Haven Private Equity Asia IV	1,500,000
Domestic Equity Fund Managers		Northwest Emerging Ventures III	1,000,000
AQR Capital Management, LLC	1,683,982	Oak Investment Partners XIII	1,005,609
Aronson+Johnson+Ortiz, LP	2,250,366	Oaktree Opportunities Fund IX	1,194,357
Callan LLC	978,594	Oaktree Principal Fund V	1,005,669
Dimensional Fund Advisors	4,482,938	OrbiMed Private Investments VI	1,200,000
EAM Investors, LLC	1,339,671	Orchid Asia VI	1,428,412
The Boston Company Asset Management, LLC	2,215,481	Palladium Equity Partners IV	1,600,000
Wellington Management Company, LLP	2,653,583	Parthenon Investors IV	1,191,882
Other Domestic Equity Fund Managers	959,185	Pathway Private Equity Fund III-B	2,643,327
International Equity Fund Managers		Pemira VI	2,622,611
Acadian Asset Management, Inc.	3,770,588	Pine Brook Capital Partners II	1,749,052
AllianceBernstein International	3,430,359	Providence Equity Partners VII	2,250,000
AQR Capital Management	3,659,370	Public Pension Capital	1,508,166
Arrowstreet Capital, LP	10,074,658	Rhône Partners V	4,113,360
Brandes Investment Partners LLC	3,391,259	Riverside Capital Appreciation Fund VI	1,500,000
Dimensional Fund Advisors	4,078,501	Roark Capital Partners IV	1,875,000
Genesis Investment Management, Ltd.	3,415,839	RRJ Capital Master Fund III	2,604,168
Harris Associates	2,673,020	Sixth Civen Fund	1,754,009
Lazard Asset Management	4,273,340	Sofinova Venture Partners VIII	1,053,804
Los Angeles Capital	1,078,941	Taiwind Capital Partners II	1,125,000
Pyramis Global Investors	4,353,874	TDR Capital III	1,454,731
TT International Co., Ltd.	1,312,457	TPG Growth III	3,324,664
Victory Capital Management	1,183,045	TPG Partners VI	2,433,759
Walter Scott & Partners Limited	2,522,718	TPG Partners VII	3,910,249
Wells Capital Management	1,012,299	Veritas Capital Fund V	2,813,245
Westwood Global Investments	2,001,615	Vestar Capital Partners VI	1,125,000
William Blair & Company, LLC	2,800,601	Vista Equity Partners Fund IV	1,500,000
Other International Equity Fund Managers	871,325	Vista Equity Partners Fund V	3,000,000
Real Estate Portfolio Managers		Vista Equity Partners Fund VI	6,012,228
Alpha Asia Macro Trends Fund II	2,586,000	Vista Foundation Fund II	1,500,000
Ascentris-OR Partners LLC	1,726,164	Vista Foundation Fund III	4,000,000
Blackstone Real Estate Partners VII, LP	1,034,082	Wellspring Capital Partners III	7,106,442
Brazil Real Estate Opportunities II	1,560,858	Wellspring Capital Partners IV	10,334,402
Clarion Columbia Office Property	3,473,286	Wellspring Capital Partners V	10,452,219
DivcoWest Fund V	1,507,536	Other Private Equity Portfolio Managers	58,620,724
Fortress Investment Fund V	1,032,290	Alternatives Portfolio Managers	
GI Partners Fund III	1,057,545	Alinda Infrastructure Fund II	1,983,251
Harrison Street Real Estate Partners V-A	1,725,000	Alternia Core Capital Assets Fund II	1,500,000
Landmark Real Estate Partners VII, L.P.	1,000,000	Appian Natural Resources Fund	1,000,000
Lincoln	3,221,480	Brookfield Agriculture Fund II	3,103,000
Lone Star Fund IX	1,588,657	Brookfield Infrastructure Fund III	3,932,332
Lone Star Real Estate Fund V	4,440,711	Energy and Minerals Group Fund III	2,506,541
LORE One, L.P. (Core)	1,970,666	EnerVest Energy Institutional Fund XIV	3,000,000
LORE One, L.P. (Value Add)	2,459,751	EQT Infrastructure Fund III	1,649,597
Madison Realty Capital Debt Fund III, LP	2,246,901	Global Infrastructure Capital Solutions Fund	2,311,999
Och-Ziff Real Estate Fund III	1,250,000	Global Infrastructure Partners II	2,112,868
Prologis Targeted Europe Logistics Fund	1,294,104	Global Infrastructure Partners III	5,152,191
Regency Core	1,126,792	Highstar Capital Fund IV	1,234,104
Regency II	1,062,550	LS Power Equity Partners III	1,500,000
Rockwood Capital RE Partners VII	1,212,538	NGP Agribusiness Follow-on Program	1,004,454
Talmage Separate Account (fka Guggenheim Sep Acc)	1,891,163	NGP Natural Resources X	1,018,595
Waterton Residential Property Venture XII	1,245,182	NGP Natural Resources XI	2,994,822
Windsor Columbia Realty Fund	4,401,738	Northern Shipping Fund III	1,781,250
Other Real Estate Portfolio Managers	25,538,747	Orion Mine Finance Fund I	1,148,917
Private Equity Portfolio Managers		Sailingstone Global Natural Resources	3,926,159
ACON Equity Partners IV	2,981,804	Sheridan Production Partners I-B	1,250,000
Advent Latin American Private Equity VI C	1,500,000	Sheridan Production Partners III-B	3,750,000
Apax VIII-B	1,613,721	Starwood Energy Infrastructure Fund III	1,125,000
Apollo Investment Fund VIII	4,399,451	Stonepeak Infrastructure Fund	1,010,760
Aquiline Financial Services Fund II	1,249,364	Stonepeak Infrastructure Fund II	5,000,000
Aquiline Financial Services Fund III	1,750,000	Taurus Mining Finance Fund	1,250,000
Asia Opportunity Fund III	1,323,777	Warwick Partners III	2,995,867
Baring Asia Private Equity Fund V	1,439,180	Other Alternatives Portfolio Managers	9,518,961
Baring Asia Private Equity Fund VI	2,340,000	Opportunity Portfolio Managers	
Blackstone Capital Partners VI	1,232,768	Blackstone Tactical Opportunities	1,837,461
Blackstone Capital Partners VII	3,718,750	Fidelity Real Estate Opportunistic Income Fund	1,464,194
Blackstone Energy Partners II	2,259,964	Lone Star Fund X	1,613,710
CDH Fund V	1,784,300	Nephila Juniper Fund	1,133,579
Centerbridge Capital Partners III	1,517,347	Nephila Palmetto Fund	1,019,052
Centerbridge Special Credit Partners III	2,246,910	Sanders Capital All Asset Value Fund	3,585,791
Coller International Partners VI	1,031,421	TPG Specialty Lending Europe I	1,091,888
Court Square Capital Partners III	1,125,000	TSSP Adjacent Opportunities Partners	2,942,031
CVC Capital Partners VI	2,563,807	Other Opportunity Portfolio Managers	2,307,716
Encap Energy Capital Fund X	1,350,000	Brokerage Commissions	
First Reserve Fund XII	1,594,786	18,489,810	
Fisher Lynch Co-Investment Partnership II	3,492,048	Consultant Fees	
Francisco Partners III	1,228,359	7,489,482	
Francisco Partners IV	5,325,000	State Street Bank:	
General Atlantic	3,750,000	Commission Expense - Option Future	36,713,207
GGV Capital V	1,142,791	Foreign Income Taxes	13,742,776
GI Partners Fund IV	1,750,000	Operating Expenses ¹	112,505,452
Hellman & Friedman Capital Partners VIII	1,500,777	Other Expenses ²	14,919,453
KKR 2006 Fund	1,483,755	State Treasury Fees	
KKR Asian Fund II	3,100,000	12,043,676	
		Deferred Compensation Investment Fees and Expenses	
		3,723,055	
		Other Investment Fees and Expenses	
		897,353	
		Total Investment Fees, Commissions and Expenses	\$ 704,211,537

¹Start up fee for new private equity fund and improvement made to real estate property.

²Expenses related to legal expenses, travel, consulting, and other expenditures.

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Investment Section

JOHN D. SKJERVEM
CHIEF INVESTMENT OFFICER
INVESTMENT DIVISION



PHONE 503-431-7900
FAX 503-620-4732

STATE OF OREGON
OFFICE OF THE STATE TREASURER
16290 SW UPPER BOONES FERRY ROAD
TIGARD, OREGON 97224

October 31, 2017

Dear PERS Members:

The Investment Division of the Oregon State Treasury (OST) manages a large and complex investment portfolio. This portfolio is designed to generate investment returns which help fund many important State objectives including retirement security for public sector employees, academic support for Oregon schoolchildren and compensation claims for injured state workers. In aggregate, the Investment Division oversees a financial and real asset portfolio that exceeded \$95.5 billion as of June 30, 2017. This portfolio includes the Oregon Public Employee Retirement Fund (OPERF), which advanced 11.9% last fiscal year, totaled \$73.0 billion at June 30, 2017 and comprised the Oregon Public Employee Retirement System Defined Benefit Pension Plan, the Individual Account Program of the Oregon Public Service Retirement Plan and other post-employment benefit plans.

Consistent with institutional investment standards, OPERF is broadly and deliberately diversified across several asset classes and multiple developed and emerging market geographies. Moreover, OPERF investment strategies have historically produced good results: average, annualized net returns for the three-, five- and ten-year periods ended June 30, 2017 were 5.7%, 9.2% and 5.4%, respectively¹. According to state actuaries, this consistently positive investment performance has significantly reduced taxpayers' share of retiree benefit payments.

On behalf of all Oregon Public Employee Retirement System beneficiaries, OPERF assets are commingled, invested consistent with a common set of objectives and allocated among the following five, strategic investment categories: public equity; private equity; real estate; fixed income; and other "alternative" and "opportunistic" investments. Return expectations and target allocations for each of these five categories are developed between staff and external consultants; moreover, return forecasts contemplate a 20-year investment horizon. Importantly, equity-oriented investments represent OPERF's largest capital allocation. While improving the likelihood of generating an adequate, long-term return, this equity-biased approach also produces higher levels of short-term portfolio volatility.

For example, in bull market conditions (e.g., 2013), OPERF's equity-oriented portfolio will likely generate strong investment results, but during periods of market duress and/or outright asset price declines (e.g., 2008), OPERF's investment performance will lag long-term expectations and may even register negative returns. Accordingly, the Investment Division has broadly diversified OPERF's portfolio in an attempt to mitigate short-term asset price volatility and protect against a sharp and/or protracted downturn in any single market, geography or asset category.

¹ All performance figures cited throughout this letter are based on market values and time-weighted return calculations.

PERS Letter
October 31, 2017

The U.S. stock market (as measured by the Russell 3000 index) generated strong returns last fiscal year (FY 2017), advancing 18.5% over the 12-month period ended June 30, 2017. With a net gain of 19.6%, OPERF's U.S. public equity portfolio outperformed its Russell 3000 benchmark due to an emphasis on small capitalization stocks, a proxy for which (namely, the Russell 2000 index) jumped 24.6% in FY 2017. Foreign equities compared favorably to domestic stocks in FY 2017 as most international and emerging market indices surged: OPERF managers investing abroad produced a collective 21.1% gain last fiscal year, better than the 20.4% earned by OPERF's non-U.S. public equity benchmark, the MSCI ACWI Ex-US IMI Net index.

With an estimated fiscal year-end value of \$14.3 billion, OPERF's private equity investments represented 19.6% of total OPERF assets at June 30, 2017, and generated a net gain of 12.6% in FY 2017. This result lagged the private equity portfolio's 21.6% benchmark return. At 8.6%, average annual returns over the previous 10-year period fell considerably short of the 11.2% return for this same benchmark, the Russell 3000 (lagged one quarter) plus 300 basis points, as public market assets pushed further into a multi-year trend of outperformance relative to private market equivalents.

In real estate, OPERF capital is allocated across four property or security types: core; value-add; opportunistic; and publicly-traded real estate investment trusts (i.e., REITs). In FY 2017, OPERF's real estate investments generated a 6.9% net gain, slightly behind the 7.4% return on OPERF's real estate benchmark, the NCREIF Fund Index – Open End Diversified Core Equity, lagged one quarter. At fiscal year-end, these real estate investments were valued at \$8.7 billion, and represented 11.9% of total OPERF assets. For the ten-year period ended June 30, 2017, OPERF's real estate portfolio delivered a net 5.0% on an average annual basis, shy of the benchmark's 6.7% average annual return during that same period.

Bond markets delivered modest but volatile results in FY 2017, driven primarily by the competing and at times opposing forces of persistently tepid economic growth and daily speculation regarding changes in U.S. Federal Reserve monetary policy. Investments in fixed income securities comprised 19.2% of total OPERF assets at June 30, 2017, and contributed a 1.5% net return in FY 2017, beating the near negligible 0.4% return recorded by OPERF's custom fixed income benchmark.

Finally, OPERF investments in "alternative" assets and "opportunistic" strategies contributed disparate but positive results in FY 2017 (11.0% and 6.2%, respectively), an expected outcome given the highly heterogeneous nature of these two categories which include, among other things, investments in minerals and mining, timber, agriculture, infrastructure and select, systematic hedge funds. At June 30, 2017, these alternative asset and opportunistic strategies comprised only 7.9% of OPERF's total portfolio, but the Investment Division plans to continue expanding these strategies' combined OPERF allocation given their attractive return and diversification attributes.

Sincerely,



John D. Skjervem
Chief Investment Officer

Oregon Public Employees Retirement System

Investment Objectives

The function of PERS is to provide present and future retirement or survivor benefits for its members. The investment program comprising OPERF, which includes PERS' Defined Benefit Pension Plan, Oregon Public Service Retirement Plan – Individual Account Program, and Other Post Employment Benefit Plans, is managed to provide long-term financial security for PERS members while maintaining the Fund's stability and future productivity. The OIC has established policies that promote and guide investment strategies with the highest probability of achieving PERB's approved, actuarial discount rate at a corresponding risk level deemed acceptable for both active and retired PERS members.

Description of Investment Policies

Oregon Revised Statute (ORS) 293.706 established the Oregon Investment Council (OIC), which consists of five voting members. Four members of the council, who are qualified by training and experience in the field of investment or finance, are appointed by the governor subject to state Senate confirmation. The state treasurer serves as the council's remaining voting member. In addition, the director of the Public Employees Retirement System serves as a non-voting OIC member.

ORS 293.701 defines the investment funds over which OIC has responsibility. Included are the Oregon Public Employees Retirement Fund (OPERF) and the Deferred Compensation Fund. OIC establishes policies for the investment and reinvestment of moneys in the investment funds as well as the acquisition, retention, management, and disposition of investments in the investment funds. OIC is also responsible for providing an examination of the effectiveness of the investment program.

OIC ensures moneys in the investment funds are invested and reinvested to achieve the investment objective of making the moneys as productive as possible. Furthermore, the investments of those funds are managed as a prudent investor would do under the prevailing circumstances and in light of the purposes, terms, distribution requirements, and laws governing each investment fund. This standard requires the exercise of reasonable care, skill, and caution and is applied to investments not in isolation, but in the context of each fund's portfolio as part of an overall investment strategy. The strategy should incorporate risk and return objectives reasonably suitable to the particular investment fund.

When implementing investment decisions, OIC has a duty to diversify the investments of the investment funds unless, under the circumstances, it is not prudent to do so. In addition, OIC must act with prudence when selecting agents and delegating authority. OIC has approved the following asset classes for OPERF: Short-Term Investing,

Fixed Income, Real Estate, Public and Private Equities, and Alternative Investments. In addition, OPERF invests in the Opportunity Portfolio, which may be populated with investment approaches across a wide range of investment opportunities with no limitation as to asset classes or strategies. OIC must approve, in advance, the purchase of investments in a new asset class not described above.

OIC has an open-door policy wherein investment officers employed by the Oregon State Treasury will hear and consider investment proposals and solicitations from any person, firm, or partnership that submits a proposal or solicitation in good faith. However, under no circumstance does this policy require that the Oregon State Treasury purchase the proposed investment.

OIC maintains an equal opportunity policy. When awarding contracts or agreements, OIC does not discriminate because of age, race, color, sex, religion, national origin, marital status, sexual orientation, or disability. Furthermore, OIC encourages firms doing or seeking to do business with OIC to have equal opportunity programs. OIC requires that all written contracts or agreements with OIC incorporate reference that affirms compliance with applicable nondiscrimination, equal opportunity, and contract compliance laws.

In compliance with ORS 192.630-660, OIC holds its meeting in a public forum. Public notice, including a meeting agenda, is provided to interested persons and news media that have requested notice. Written minutes and recordings are taken at all meetings.

OIC regularly reviews various aspects of investment policy, performance of investment managers and accounts, asset allocation, and a large number of investment proposals and recommendations. OIC's statement of Investment Objectives and Policy Framework is available on the Oregon State Treasury website at [http://www.oregon.gov/treasury/Divisions/Investment/Pages/Oregon-Investment-Council-\(OIC\).aspx](http://www.oregon.gov/treasury/Divisions/Investment/Pages/Oregon-Investment-Council-(OIC).aspx).

Investment Results*

Periods Ending June 30, 2017

	Annualized		
	1-Year	3-Year	5-Year
Total Portfolio, Excluding Variable Account	11.92 %	5.72 %	9.19 %
Policy Benchmark ¹	13.02	6.59	9.85
Variable Account	19.52	5.30	11.11
Benchmark: MSCI All Country World Investable Market Index Net	19.01	4.87	10.74
Domestic Stocks	19.61	8.41	14.14
Benchmark: Russell 3000 Index	18.51	9.10	14.58
International Stocks	21.11	2.55	9.11
Benchmark: MSCI All Country World ex-US Investable Market Index Net	20.43	1.14	7.58
Fixed Income Segment	1.48	2.19	3.13
Benchmark: Custom Index ²	0.41	1.81	2.50
Real Estate	6.94	9.93	11.36
Benchmark: Oregon Custom Real Estate Benchmark ³	7.36	10.52	10.65
Private Equity ⁴	12.61	8.84	11.54
Benchmark: Russell 3000 Index + 300 bps	21.56	13.02	16.54
Alternative Equity	11.03	2.58	2.50
Benchmark: Consumer Price Index + 400bps	5.69	4.95	5.36
Opportunity Portfolio	6.18	1.89	8.18
Benchmark: Russell 3000 Index	18.51	9.10	14.58

The rates of return reported in the Investment Section are based on a time-weighted rate of return methodology based upon market values, unless disclosed otherwise in the footnotes to the associated tables.

¹ From May 1, 2008 to September 30, 2013, the policy benchmark was 16% Russell 3000+300 Bps quarter lag, 27% Oregon Custom Fixed Income (FI) Benchmark, 11% National Council of Real Estate Investment Fiduciaries (NCREIF) Property Index quarter lag and 46% Morgan Stanley Capital International All Country World Index (MSCI ACWI). From October 1, 2013 to March 31, 2016, the policy benchmark was 20% Russell 3000+300 Bps quarter lag, 23.5% Oregon Custom FI Benchmark, 12.5% NCREIF Property Index quarter lag, 41.5% MSCI ACWI and 2.5% CPI+4%.

From April 1, 2016 to June 30, 2016 the policy benchmark was 20% Russell 3000+300 Bps quarter lag, 23.5% Oregon Custom FI Benchmark, 12.5% Oregon Custom Real Estate Benchmark, 41.5% MSCI AC World Index and 2.5% CPI+4%.

From July 1, 2016 to present the policy benchmark is 20% Russell 3000+300 Bps quarter lag, 22.5% Oregon Custom FI Benchmark, 12.5% Oregon Custom Real Estate Benchmark, 40% MSCI ACWI IMI Net and 5% CPI+4%.

² From March 1, 2011 to December 31, 2013, index was 60% Barclays Capital (BC) U.S. Universal Index, 20% S&P/LSTA Leveraged Loan Index, 10% JP Morgan Emerging Market Bond Index Global Index, and 10% Bank of America Merrill Lynch (BoFA ML) High Yield Master II Index.

From January 1, 2014 to February 29, 2016, index was 40% BC U.S. Aggregate Bond, 40% BC U.S. 1-3 Year Government/Credit Bond Index, 15% S&P LSTA Leveraged Loan Index, and 5% BoFA ML High Yield Master II Index.

From March 1, 2016 to present, index is 46% Barclays Aggregate Bond, 37% Barclays Treasury, 13% S&P LSTA and 4% BoFA ML High Yield Master II.

³ Through March 31, 2016, the Oregon Custom Real Estate Benchmark was made up of the NCREIF Property quarter lag Index.

From April 1, 2016, the benchmark, is made up of the NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE) quarter lag Net of Fees.

⁴ Beginning in September 2010, the return combines the estimated return from the most recent quarter with a revision component that trues up the past two quarters' reported returns with the past two quarters' actual returns.

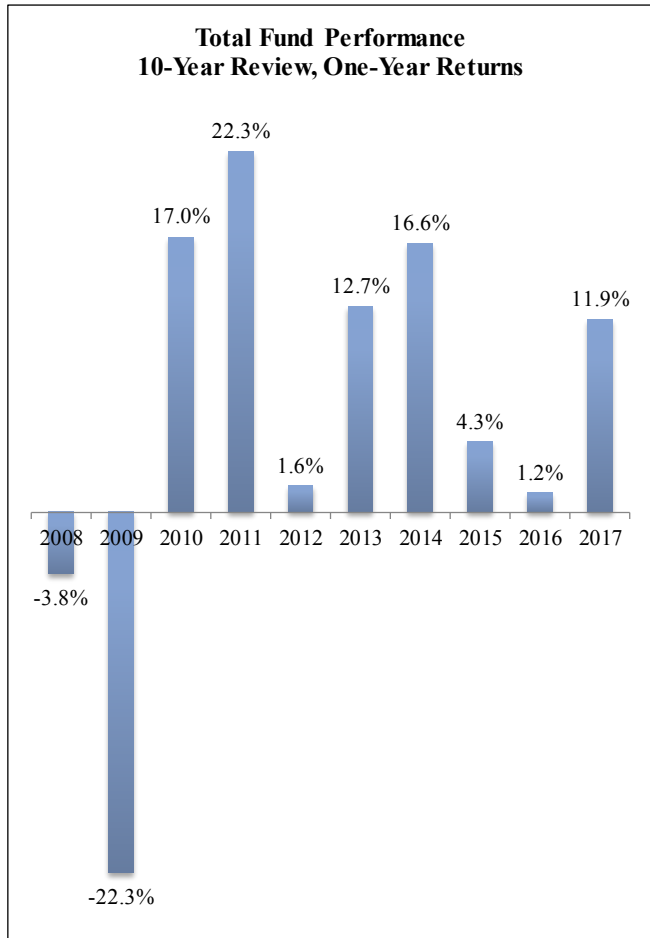
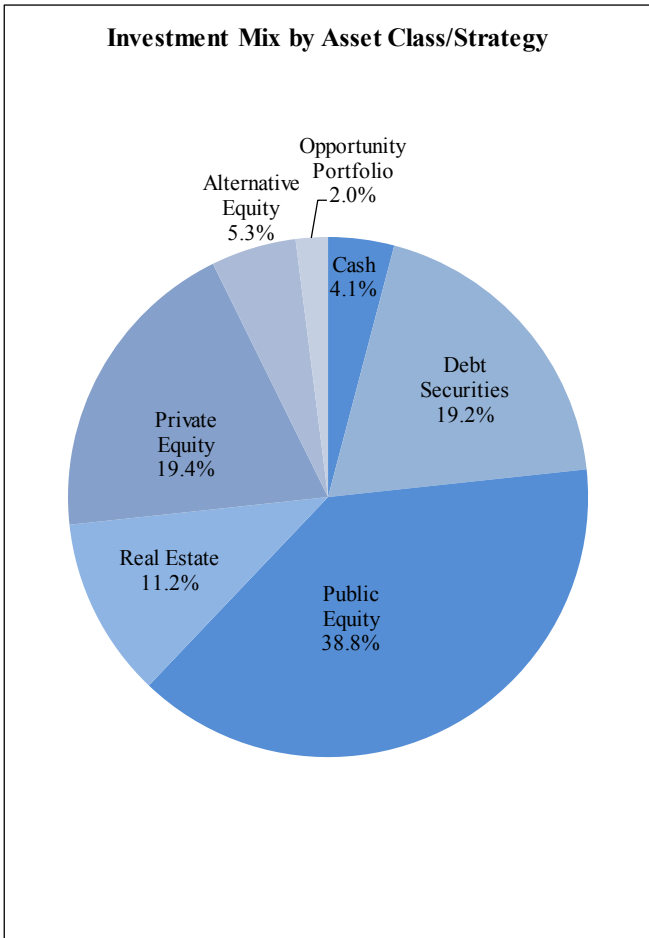
* Investment Results are based upon OIC asset classes as determined by each manager's primary investment type, not the financial statement classification of individual holdings.

Oregon Public Employees Retirement System

OIC Target and Actual Investment Allocation as of June 30, 2017*

Asset Class/Strategy	OIC Policy Range	OIC Target Allocation	Asset Class/Strategy	Actual Allocation
Cash	0.0 - 3.0 %	0.0 %	Cash	4.1 %
Debt Securities	15.0 - 25.0	20.0	Debt Securities	19.2
Public Equity	32.5 - 42.5	37.5	Public Equity	38.8
Real Estate	9.5 - 15.5	12.5	Real Estate	11.2
Private Equity	14.0 - 21.0	17.5	Private Equity	19.4
Alternative Equity	0.0 - 12.5	12.5	Alternative Equity	5.3
Opportunity Portfolio ¹	0.0 - 3.0	0.0	Opportunity Portfolio	2.0
Total		100.0 %	Total	100.0 %

¹ Opportunity Portfolio is an investment strategy and it may be invested up to 3% of total plan net assets.



* The OIC Target Allocations are based on OIC asset classes as determined by each manager's primary investment type, not the financial statement classification of individual holdings. The Target Allocation amounts do not include Deferred Compensation Plan investments. The Actual Investment Allocation is based on the financial statement investment classifications, including Deferred Compensation Plan investments.

List of Largest Assets Held

Largest Stock Holdings (by Fair Value)

June 30, 2017

<u>Description</u>	<u>Shares</u>	<u>Fair Value</u>
Apple Inc.	2,970,029	\$ 427,743,577
Microsoft Corporation	3,183,345	219,427,971
JPMorgan Chase & Company	2,207,748	201,788,167
Johnson & Johnson	1,512,446	200,081,481
Bank of America Corporation	7,446,919	180,662,255
AT&T Inc.	4,169,435	157,312,783
Pfizer Inc.	4,517,661	151,748,233
Intel Corporation	4,117,361	138,919,760
Comcast Corporation	3,562,469	138,651,293
Samsung Electronics Co Ltd.	66,335	137,812,608

Largest Bond Holdings (by Fair Value)

June 30, 2017

<u>Description</u>	<u>Par Value</u>	<u>Fair Value</u>
US Treasury Note 1.500% Due October 31, 2019	255,384,000	\$ 255,723,660
US Treasury Note 1.375% Due February 28, 2019	254,769,000	254,799,572
US Treasury Note 1.250% Due January 31, 2020	256,358,000	254,786,525
US Treasury Note 1.875% Due June 30, 2020	251,697,000	254,047,850
US Treasury Note 1.500% Due January 28, 2019	252,642,000	253,154,863
US Treasury Note 1.500% Due March 31, 2019	245,750,000	246,334,885
US Treasury Note 2.125% Due August 15, 2021	226,606,000	229,792,080
US Treasury Note 1.750% Due February 28, 2022	221,619,000	220,674,903
US Treasury Note 1.375% Due September 30, 2020	219,278,000	217,650,957
US Treasury Note 2.125% Due June 30, 2022	214,546,000	216,875,970

A complete list of portfolio holdings may be requested from the Oregon State Treasury, 350 Winter Street NE, Suite 100, Salem, OR 97301-3896.

Oregon Public Employees Retirement System

Schedule of Fees and Commissions

For the Fiscal Year Ended June 30, 2017

	<u>Assets Under Management</u>	<u>Fees</u>	<u>Percentage</u>
Investment Managers' Fees:			
Debt Securities Managers	\$14,968,539,870	\$22,230,766	0.0015 %
Public Equity Managers	30,225,870,153	72,775,356	0.0024
Real Estate Managers	8,718,684,190	71,653,741	0.0082
Private Equity Managers	15,017,344,594	231,579,067	0.0154
Alternative Equity Managers	4,138,735,188	68,760,668	0.0166
Opportunity Portfolio Managers	1,587,753,762	16,995,422	0.0107
Total Assets Under Management	<u>\$74,656,927,757</u>		

Other Investment Service Fees:

Investment Consultants	7,489,482
Commissions and Other Fees	212,727,035
Total Investment Service and Managers' Fees	<u>\$704,211,537</u>

Schedule of Broker Commissions

For the Fiscal Year Ended June 30, 2017

<u>Broker's Name</u>	<u>Commission</u>	<u>Shares / Par</u>	<u>Commission per Share</u>
INSTINET	\$ 2,151,911	952,454,872	\$ 0.0023
Goldman, Sachs & Co.	1,760,854	193,602,692	0.0091
UBS Securities Inc.	1,131,665	203,056,042	0.0056
Merrill Lynch & Co., Incorporated	1,121,386	220,561,144	0.0051
Barclays Capital, Inc.	1,056,465	60,721,311	0.0174
Citigroup Global Markets Inc.	944,474	278,168,887	0.0034
Morgan Stanley	884,344	289,301,887	0.0031
J.P. Morgan Securities Inc.	859,643	237,927,295	0.0036
Credit Suisse First Boston	672,661	134,919,903	0.0050
Investment Technology Group Inc.	592,018	151,049,669	0.0039
Deutsche Bank	581,055	142,832,745	0.0041
Société Générale	496,503	302,159,291	0.0016
Jefferies & Company, Inc.	372,450	83,136,745	0.0045
Macquarie Securities	342,280	162,551,190	0.0021
Royal Bank of Canada	233,944	9,278,623	0.0252
BNP Paribas Securities Services	225,165	56,091,710	0.0040
HSBC	193,642	69,839,560	0.0028
Frank Russell Securities Broadcort Capital	178,319	6,733,824	0.0265
Sanford C Bernstein & Co LLC	157,003	62,959,561	0.0025
Pershing LLC	154,753	28,510,388	0.0054

Brokerage commissions on purchases and sales are too numerous to list; therefore, only the top 20 brokers by amount of commission paid are shown.

Investment Summary

Type of Investment	Fair Value as of June 30, 2017	Percent of Total Fair Value ¹
Debt Securities		
US Government Securities	\$ 6,844,783,087	9.17 %
US Agency Securities	1,741,873,176	2.33
Corporate Bonds	3,228,481,247	4.32
Asset-Backed Securities	1,218,271,684	1.63
International Debt Securities	910,637,728	1.22
Non-US Government Debt Securities	182,475,856	0.24
Municipal Bonds	28,201,844	0.04
Guaranteed Investment Contracts ²	178,535,884	0.24
Domestic Fixed Income Funds	598,796,147	0.80
International Fixed Income Funds	36,483,217	0.05
Total Debt Securities	14,968,539,870	20.04
Public Equity		
Domestic Equity Securities	13,291,152,139	17.80
International Equity Securities	11,679,899,999	15.64
Domestic Equity Funds	1,286,567,504	1.72
Global Equity Funds	2,108,627,734	2.82
International Equity Funds	1,323,753,702	1.77
Target Date Fund	535,869,075	0.72
Total Public Equity	30,225,870,153	40.47
Real Estate	8,718,684,190	11.68
Private Equity	15,017,344,594	20.14
Alternative Equity	4,138,735,188	5.54
Opportunity Portfolio	1,587,753,762	2.13
Total Fair Value	\$ 74,656,927,757	100.00 %

¹ These percentages do not include cash and cash equivalents.

² Guaranteed Investment Contracts are stated at contract value.

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Actuarial Section

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December 6, 2017

Public Employees Retirement Board
Oregon Public Employees Retirement System

Re: Actuarial Valuation as of December 31, 2016

Dear Members of the Board,

As part of our engagement with the Oregon Public Employees Retirement System (“PERS” or “the System”), we performed an actuarial valuation of PERS as of December 31, 2016. Our findings are set forth in the system-wide December 31, 2016 Actuarial Valuation, issued December 6, 2017. Previously, we published a system-wide December 31, 2015 Actuarial Valuation, which was issued September 27, 2016. Both reports reflect the current benefit provisions of the system, including the effects of the Oregon Supreme Court decision in *Moro v. State of Oregon*.

Both the December 31, 2016 Actuarial Valuation and the December 31, 2015 Actuarial Valuation are used to develop information provided in the Comprehensive Annual Financial Report (CAFR) for Oregon PERS. The December 31, 2016 Actuarial Valuation forms the basis for the *Actuarial Section* of the CAFR. The December 31, 2015 Actuarial Valuation is used to develop the financial reporting results required by Governmental Accounting Standards Board (GASB) Statement No. 67 for the Tier 1/Tier 2 and OPSRP programs and by GASB Statement No. 74 for the RHIA and RHIPA programs.

Actuarial Section of the CAFR

The material included in the *Actuarial Section* of CAFR for Oregon PERS is a subset of the results contained in the December 31, 2016 Actuarial Valuation. The descriptions in that report regarding the actuarial basis of the valuation and the material inputs and limitations of use of the valuation apply to the CAFR exhibits, and are incorporated herein by reference.

Actuarial valuations are performed annually, but only “rate-setting” valuations performed as of the end of each odd-numbered year are used to set actuarially determined biennial contribution rates. Those rates are then considered for adoption by the Public Employees Retirement Board (“PERB”). Interim valuations performed as of the end of each even-numbered year are only advisory in nature, and contribution rates developed in those valuations are not presented to the PERB for adoption.

The PERB has sole authority to determine the actuarial assumptions and methods used for the valuation. The actuarial assumptions and methods used in the December 31, 2016 Actuarial Valuation were adopted by the PERB based upon the results of the 2016 Experience Study conducted by Milliman, issued July 26, 2017. The actuarial assumptions and methods used in the December 31, 2015 Actuarial Valuation were adopted by the PERB based upon the results



This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Public Employees Retirement Board
Oregon Public Employees Retirement System
December 6, 2017
Page 2

of the 2014 Experience Study conducted by Milliman, issued September 23, 2015. The assumptions and methods were selected in a manner consistent with current Actuarial Standards of Practice.

Milliman prepared the following information that is presented in the *Actuarial Section* of the 2017 Comprehensive Annual Financial Report (CAFR) based on the December 31, 2016 Actuarial Valuation:

- Schedule of Active Member Valuation Data
- Schedule of Retirees and Beneficiaries Added to and Removed from Rolls
- Schedules of Funding Progress by Rate Pool
- Solvency Test
- Analysis of Financial Experience
- Schedules of Funding Progress

We understand the *Actuarial Section* of the CAFR will also include summaries of the actuarial methods, actuarial assumptions, and plan provisions valued. These summaries are contained in the December 31, 2016 Actuarial Valuation.

Financial Reporting Under GASB 67 and GASB 74

Under GASB 67 and GASB 74, the required financial reporting schedules present information using a Measurement Date of the System's fiscal year end. The Total Pension Liability (under GASB 67) and Total OPEB Liability (under GASB 74) for the June 30, 2017 fiscal year end was determined based on the results of the December 31, 2015 Actuarial Valuation. The liability calculated at the actuarial valuation date was then adjusted to the Measurement Date using standard actuarial roll-forward procedures. The Total Pension Liability/Total OPEB Liability is compared to the Fiduciary Net Position as of the Measurement Date, as provided by PERS and measured on a fair market value of assets basis, to determine the Net Pension Liability (Asset) under GASB 67 and the Net OPEB Liability (Asset) under GASB 74.

Milliman prepared the following exhibits for GASB 67 to assist PERS in completing the required *Notes to the Financial Statements and Required Supplementary Information*:

- Net Pension Liability (Asset)
- Changes in Net Pension Liability (Asset)
- Sensitivity Analysis
- Schedule of Changes in Net Pension Liability (Asset) and Related Ratios
- Long Term Expected Rate of Return

These exhibits, along with a discussion of the actuarial basis underlying the results, are presented in our *GASB 67 Reporting for Fiscal Year End 2017* letter dated November 29, 2017.



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Milliman prepared the following exhibits for GASB 74 to assist PERS in completing the required *Notes to the Financial Statements* and *Required Supplementary Information*:

- Net OPEB Liability (Asset)
- Changes in Net OPEB Liability (Asset)
- Sensitivity Analysis
- Schedule of Changes in Net OPEB Liability (Asset) and Related Ratios
- Long Term Expected Rate of Return

These exhibits, along with a discussion of the actuarial basis underlying the results, are presented in our *GASB 74 Reporting for Fiscal Year End 2017* letter dated November 29, 2017. The first four exhibits listed above were provided separately for RHIA and RHIPA.

Funding Policy

The funding policy selected by the PERB is to adopt biennial contribution rates in accordance with the results of a “rate-setting” actuarial valuation performed using the assumptions and methods described in the associated actuarial valuation report. For example, the rates developed in the December 31, 2015 Actuarial Valuation were adopted by the PERB and established employer contributions for the July 1, 2017 to June 30, 2019 biennium. Contribution rates include funding the cost associated with new benefit accruals as well as amortizing any unfunded actuarial liability, determined using the market value of assets, over closed, layered amortization periods that vary from 10 to 20 years, according to the benefit program. The contribution rate stabilization method (also known as the “rate collar”) limits rate changes from one biennium to the next, in effect phasing in changes over multiple rate-setting periods if asset or liability experience causes a large movement in the actuarially calculated contribution rate prior to application of the rate collar.

All members hired prior to August 29, 2003, are covered under Chapter 238 and are collectively referred to as Tier 1/Tier 2 members. Their benefit costs are calculated using two experience sharing pool valuations and some independent employer valuations. All school districts pool their Tier 1/Tier 2 experience through the school district pool. State government and some local governments pool their Tier 1/Tier 2 experience through the State and Local Government Rate Pool (SLGRP). As of December 31, 2016, there are also 129 independent employers who do not pool their Tier 1/Tier 2 experience with the other employers except through the Benefits in Force Reserve, which pools the experience of Tier 1/Tier 2 members in payee status across all employers and all other Tier 1/Tier 2 pooling arrangements.

All members hired after August 28, 2003, are covered under Chapter 238A and are referred to as OPSRP members, except for those members who previously established membership under Chapter 238 and meet the statutory requirements to reinstate those benefits. Experience for Chapter 238A members is pooled across all employers regardless of their status under the Chapter 238 arrangements. Chapter 238 benefits and Chapter 238A benefits are parts of a single plan.



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Finally, some employers made lump sum deposits in addition to their regularly scheduled contributions. These deposits are placed in a "side account" within the legally restricted pension trust and are used to offset a portion of future contribution requirements of the depositing employers via side account transfers. For financial reporting purposes, lump sum deposits are not considered as contributions in relation to the actuarially determined contribution. However, side accounts are included as assets in the Fiduciary Net Position. The Schedule of Funding Progress and Solvency Test also include side accounts as part of the Plan's assets.

Actuarial Basis

In preparing the valuation reports, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

The valuation reports are only an estimate of the System's financial condition as of a single date. They can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of the System's actuarially calculated contributions. While the valuations are based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in these reports due to such factors as the following: System experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The PERB has the final decision regarding the appropriateness of the assumptions and adopted them as indicated herein at its July 2017 public meeting.



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Some of the actuarial computations presented in the valuation reports are for purposes of determining contribution rates for System employers. Other actuarial computations presented in the reports under GASB Statements No. 67, 68, 74, and 75 are for purposes of assisting the System and participating employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the reports have been made on a basis consistent with our understanding of the System's funding policy and goals, the System benefit provisions as summarized in the reports, and GASB Statements No. 67, 68, 74, and 75. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in these reports. Accordingly, additional determinations may be needed for other purposes.

Milliman's work has been prepared exclusively for the Oregon Public Employees Retirement System for a specific and limited purpose. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. It is a complex, technical analysis that assumes a high level of knowledge concerning the System's operations, and uses the System's data, which Milliman has not audited. No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Sincerely,



Matthew R. Larrabee, FSA, EA, MAAA
Principal and Consulting Actuary



Scott D. Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary



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Actuarial Methods and Assumptions



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Tier 1/Tier 2 (including Retiree Healthcare)

Actuarial Methods and Valuation Procedures

In July 2017 the Board adopted the following actuarial methods and valuation procedures for the December 31, 2016 and 2017 actuarial valuations of PERS Tier 1/Tier 2 benefits.

<i>Actuarial cost method</i>	<p>Entry Age Normal. Under the Entry Age Normal (EAN) cost method, each active member's entry age present value of projected benefits is allocated over the member's service from the member's date of entry until their assumed date of exit, taking into consideration expected future compensation increases. Thus, the total pension to which each member is expected to become entitled at retirement is broken down into units, each associated with a year of past or projected future credited service. Typically, when this method is introduced, there will be an initial liability for benefits credited for service prior to that date, and to the extent that the liability is not covered by assets of the plan, there is an unfunded accrued liability to be funded over a stipulated period in accordance with an amortization schedule. A detailed description of the calculation follows:</p> <ul style="list-style-type: none"> • An individual member's entry age present value of projected benefits is the sum of the present value of the benefit described under the plan at each possible separation date, determined at the member's entry age using the projected compensation and service at each separation date. • An individual member's entry age present value of projected salaries is the sum of the present value of the projected compensation over the member's working career associated with each possible future separation date, determined at the member's entry age. • An individual member's present value of projected benefits is the sum of the present value of the benefit described under the plan at each possible separation date, determined at the valuation date using the projected compensation and service at each separation date. • An individual member's normal cost for a certain year is the member's entry age present value of projected benefits divided by the member's entry age present value of projected salaries and multiplied by the member's projected compensation for the year following the valuation date. • An individual member's actuarial accrued liability is the member's present value of projected benefits less the sum of the present value of the member's normal costs for each future year, determined at the valuation date using the projected compensation and service at each future year. <ul style="list-style-type: none"> – The plan's normal cost is the sum of the individual member normal costs, and the plan's actuarial accrued liability is the sum of the individual member accrued liabilities.
<i>Tier 1/Tier 2 UAL amortization</i>	<p>The Tier 1/Tier 2 UAL amortization period was reset to 20 years as of December 31, 2013. Gains and losses between subsequent odd-year valuations will be amortized as a level percentage of projected combined valuation payroll (Tier 1/ Tier 2 plus OPSRP payroll) over a closed 20 year period from the valuation in which they are first recognized.</p>



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<i>Retiree Healthcare UAL amortization</i>	The UAL for Retiree Health Care as of December 31, 2007 is amortized as a level percentage of projected combined valuation payroll (Tier 1/ Tier 2 plus OPSRP payroll) over a closed 10 year period. Gains and losses between subsequent odd-year valuations are amortized as a level percentage of combined valuation payroll over a closed 10 year period from the valuation in which they are first recognized.
<i>Asset valuation method</i>	The actuarial value of assets equals the market value of assets, excluding the Contingency and Capital Preservation Reserves, and the Rate Guarantee Reserve when it is in positive surplus status. Market values are reported to Milliman by PERS. It is our understanding that select real estate and private equity investments are reported on a three-month lag basis. This valuation report does not attempt to quantify any effects of the reporting lag.
<i>Contribution rate stabilization method</i>	Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1/Tier 2 School Districts, OPSRP) are confined to a collared range based on the prior contribution rate (prior to application of side accounts, pre-SLGRP liabilities, and 6 percent Independent Employer minimum). The new contribution rate will generally not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the prior contribution rate. If the funded percentage excluding side accounts drops below 60% or increases above 140%, the size of the collar doubles. If the funded percentage excluding side accounts is between 60% and 70% or between 130% and 140%, the size of the rate collar is increased on a graded scale.
<i>Allocation of Liability for Service Segments</i>	For active Tier 1/Tier 2 members who have worked for multiple PERS employers over their career, the calculated actuarial accrued liability is allocated among the employers based on a weighted average of the Money Match methodology, which uses account balance, and the Full Formula methodology, which uses service. The allocation is 15% (0% for police & fire) based on account balance with each employer and 85% (100% for police & fire) based on service with each employer. The entire normal cost is allocated to the current employer.
<i>Allocation of Benefits-In-Force (BIF) Reserve</i>	The BIF reserve is allocated to each rate pool in proportion to the retiree liability attributable to the rate pool.



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Economic Assumptions

The Board adopted the following economic assumptions for the December 31, 2016 and 2017 actuarial valuations. All assumptions were reviewed and adopted in conjunction with the 2016 Experience Study, published in July 2017. The assumption selection process and rationale is described in detail in that report.

<i>Investment return</i>	7.20% compounded annually
<i>Pre-2014 Interest crediting</i>	8.00% compounded annually on members' regular account balances 8.25% compounded annually on members' variable account balances
<i>Post-2013 Interest crediting</i>	7.20% compounded annually on members' regular account balances 7.20% compounded annually on members' variable account balances
<i>Inflation</i>	2.50% compounded annually
<i>Administrative expenses</i>	\$37.5 million per year is added to the normal cost.
<i>Payroll growth</i>	3.50% compounded annually. This assumption represents the sum of the inflation assumption and a real wage growth assumption of 100 basis points.
<i>Healthcare cost trend</i>	Healthcare cost trend rates are used to estimate increases in the RHIPA Maximum Subsidy. These rates include consideration of the excise tax scheduled to be introduced in 2020 by the Affordable Care Act.

Year ¹	Rate	Year	Rate
2017	7.5%	2049 – 2052	5.4%
2018	6.5	2053 – 2058	5.3
2019	5.9	2059 – 2063	5.2
2020	5.4	2064	5.1
2021 – 2023	5.3	2065	5.0
2024 – 2025	5.2	2066	4.9
2026 – 2027	5.3	2067 – 2068	4.8
2028	5.4	2069	4.7
2029 – 2032	6.2	2070	4.6
2033 – 2039	6.1	2071	4.5
2040	6.0	2072 – 2073	4.4
2041	5.8	2074 – 2090	4.3
2042 – 2043	5.7	2091	4.2
2044 – 2045	5.6	2092	4.3
2046 – 2048	5.5	2093+	4.2

¹ For valuation purposes, the health cost trend rates are assumed to be applied at the beginning of the plan year.



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Demographic Assumptions

The Board adopted the following demographic assumptions for the December 31, 2016 and 2017 actuarial valuations. All assumptions were reviewed and adopted in conjunction with the 2016 Experience Study, published in July 2017. The study relied on data from an observation period of January 1, 2013 to December 31, 2016, with the exception of the merit scale assumption, which relied on data from 2008 through 2016. Assumptions selected from the study represent an estimate of future experience based on relevant recent experience and reasonable expectations about the future.

Mortality

Healthy Retired Members

The following healthy retired mortality tables were first adopted in the December 31 valuation of the years shown.

Basic Table	RP 2014 Healthy Annuitant, Sex Distinct, Generational Projection with Unisex Social Security Data Scale	Valuation Year Adopted
School District male	White collar, set back 12 months	2016
Other General Service male*	Blended 50% blue collar / 50% white collar, set back 12 months	2016
Police & Fire male	Blended 50% blue collar / 50% white collar, set back 12 months	2016
School District female	White collar, set back 12 months	2016
Other female**	Blended 50% blue collar / 50% white collar, no set back	2016

* including male beneficiaries of members of all classes
 ** including female beneficiaries of members of all classes

Disabled Retired Members

The following disabled retiree mortality rates were first adopted for the December 31, 2016 actuarial valuation.

Basic Table	RP 2014 Disabled Retiree, Sex Distinct, Generational Projection with Unisex Social Security Data Scale
Male	No collar adjustment or set back
Female	No collar adjustment or set back



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Non-Annuitant Members

Mortality for non-annuitant members is assumed to follow the RP-2014 Employee table, sex distinct, with generational projection using a unisex Social Security data scale, and the same collar and set back adjustments for each group as described above for Healthy Retired members.

This assumption was first adopted for the December 31, 2016 actuarial valuation.

Retirement Assumptions

The retirement assumptions used in the actuarial valuation include the following:

- Retirement from active status/dormant status
- Probability a member will elect a lump sum option at retirement
- Percentage of members who elect to purchase credited service at retirement.

Rates of Retirement from Active Status

The following retirement rate assumptions were first adopted in the December 31, 2016 valuation.

Age	Police & Fire			General Service			School Districts			Judges
	< 13 yrs	13-24 yrs	25+ yrs	<15 yrs	15-29 yrs	30+ yrs	<15 yrs	15-29 yrs	30+ yrs	
Less than 50						15.00%			25.00%	
50	1.50%	2.00%	24.00%			15.00%			25.00%	
51	1.50%	2.00%	17.50%			15.00%			25.00%	
52	1.50%	2.00%	17.50%			15.00%			25.00%	
53	1.50%	2.00%	17.50%			15.00%			25.00%	
54	1.50%	3.50%	17.50%			15.00%			25.00%	
55	3.00%	10.00%	23.50%	1.50%	3.00%	15.00%	1.50%	4.00%	25.00%	
56	3.00%	8.00%	23.50%	1.50%	3.00%	15.00%	1.50%	4.00%	25.00%	
57	3.00%	8.00%	23.50%	1.50%	3.00%	15.00%	1.50%	4.00%	25.00%	
58	6.00%	8.00%	23.50%	1.50%	10.00%	20.00%	1.50%	12.50%	28.50%	
59	6.00%	8.00%	23.50%	3.50%	10.00%	20.00%	4.50%	12.50%	28.50%	
60	6.00%	11.00%	23.50%	6.00%	10.00%	20.00%	6.50%	12.50%	28.50%	6.00%
61	6.00%	14.00%	23.50%	6.00%	10.00%	20.00%	6.50%	12.50%	28.50%	6.00%
62	15.00%	25.00%	38.00%	13.00%	19.50%	31.00%	15.00%	25.00%	34.00%	6.00%
63	15.00%	17.00%	38.00%	11.50%	16.50%	22.00%	13.00%	19.50%	26.50%	6.00%
64	15.00%	17.00%	17.00%	12.50%	16.50%	22.00%	13.00%	19.50%	31.50%	6.00%
65	100.00%	100.00%	100.00%	19.50%	28.00%	32.00%	25.50%	33.50%	42.00%	6.00%
66				27.50%	35.00%	38.00%	23.00%	36.50%	42.00%	6.00%
67				22.50%	25.00%	26.00%	21.00%	34.50%	42.00%	10.00%
68				19.50%	25.00%	26.00%	21.00%	28.00%	28.50%	10.00%
69				19.50%	25.00%	26.00%	21.00%	28.00%	28.50%	10.00%
70				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

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Retirement from Dormant Status

Dormant members are assumed to retire at Normal Retirement Age (age 58 for Tier 1, age 60 for Tier 2, age 60 for Judges, and age 55 for Police & Fire) or at the first unreduced retirement age (30 years of service, or age 50 with 25 years of service for Police & Fire).

Lump Sum Option at Retirement

Members retiring may elect to receive a full or partial lump sum at retirement. The probability that a retiring member will elect a lump sum at retirement is summarized in the table below. These rates were first adopted effective December 31, 2016.

Lump Sum Option at Retirement	
Partial Lump Sum:	3.5% for all years
Total Lump Sum:	2.0% for 2017, declining by 0.5% per year until reaching 0.0%
No Lump Sum:	94.5% in 2017, increasing by 0.5% per year until reaching 96.5%

Purchase of Credited Service at Retirement

The following percentages of members are assumed to purchase credit for the six-month waiting period at retirement. These rates were first adopted effective December 31, 2016.

Purchase of Credited Service at Retirement	
Money Match Retirements:	0%
Non-Money Match Retirements:	65%

Judge Member Plan Election

All judge members are assumed to elect to retire under the provisions of Plan B.



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Disability Assumptions

There are two disability assumptions used in the valuation - duty disability and ordinary disability. Duty disability rates are separated between Police & Fire and General Service, while ordinary disability is the same for all members. The rates for duty disability for General Service were first adopted effective December 31, 2014. The rates for duty disability for Police & Fire were first adopted effective December 31, 2012. The rates for ordinary disability were first adopted effective December 31, 2016.

Percentage of the 1985 Disability Class 1 Rates	
Duty Disability Police & Fire	20%
Duty Disability General Service	0.9%
Ordinary Disability	35% with 0.18% cap

Termination Assumptions

The termination assumptions were first adopted effective December 31, 2016, except for the Police & Fire and General Service females which were adopted effective December 31, 2014.

Termination Rates

Sample termination rates are shown for each group below:

Duration from Hire Date	School District Male	School District Female	General Service Male	General Service Female	Police & Fire
0	16.63%	13.50%	17.00%	18.50%	10.00%
1	14.25%	12.50%	15.33%	17.00%	5.97%
5	6.86%	7.13%	7.74%	9.29%	3.31%
10	3.31%	3.85%	4.15%	5.24%	2.23%
15	2.30%	2.68%	2.86%	3.66%	1.50%
20	1.62%	1.95%	2.07%	2.63%	1.01%
25	1.20%	1.50%	1.49%	1.89%	0.80%
30+	1.20%	1.50%	1.40%	1.50%	0.80%

For a complete table of rates, please refer to the 2016 Experience Study report for the System, published in July 2017.

Oregon Residency Post-Retirement

For purposes of determining eligibility for SB 656/HB 3349 benefit adjustments, 85% of retirees are assumed to remain Oregon residents after retirement.



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Salary Increase Assumptions

The salary increase assumptions reflected in the actuarial valuation include:

- Merit scale increases in addition to the payroll growth increase
- Unused Sick Leave adjustments
- Vacation Pay adjustments

Merit Increases

Merit increases are based on duration of service for the following groups with sample rates shown in the following table. These rates were first adopted effective December 31, 2016, except for the school district assumption, which was adopted December 31, 2014.

Duration	School District	Other General Service	Police & Fire
0	3.53%	3.38%	4.44%
1	3.20%	3.05%	3.95%
5	2.01%	1.94%	2.39%
10	0.82%	0.99%	1.23%
15	-0.07%	0.43%	0.69%
20	-0.67%	0.14%	0.52%
25	-0.91%	0.02%	0.44%
30+	-0.94%	-0.04%	0.21%

The assumed merit increase for active judge members is 0.0%.

For a complete table of rates, please refer to the 2016 Experience Study for the System, published in July 2017.

Unused Sick Leave

Members covered by the provision allowing unused sick leave to be used to increase final average salary are assumed to receive increases in their final average salary in accordance with the table below. This adjustment is not applied to disability benefits. Effective dates for the current assumption are shown in the table.

Unused Sick Leave	Valuation year adopted	
Actives		
• State General Service Male	6.25%	2010
• State General Service Female	3.75%	2010
• School District Male	7.50%	2016
• School District Female	5.75%	2012
• Local General Service Male	4.75%	2012
• Local General Service Female	3.25%	2014
• State Police & Fire	4.75%	2012
• Local Police & Fire	7.25%	2016
Dormant Members	3.25%	2016



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Vacation Pay

Members eligible to receive a lump sum payment of unused vacation pay are assumed to receive increases in their final average salary in accordance with the table below. This adjustment is not applied to disability benefits. These rates were adopted December 31, 2016, except the school district rates which were adopted effective December 31, 2012.

Vacation Pay	
Tier 1	
• State General Service	2.00%
• School District	0.25%
• Local General Service	2.75%
• State Police & Fire	2.50%
• Local Police & Fire	3.75%
Tier 2	
	0.00%

Retiree Healthcare Participation

The following percentages of eligible retiring members are assumed to elect RHIPA and RHIA coverage:

Retiree Healthcare Participation	
RHIPA	
• 8 – 9 years of service	10.0%
• 10 – 14 years of service	10.0%
• 15 – 19 years of service	18.0%
• 20 – 24 years of service	23.0%
• 25 – 29 years of service	29.0%
• 30+ years of service	38.0%
RHIA	
• Healthy Retired	35.0%
• Disabled Retired	20.0%

The RHIA disabled retired rate was first adopted December 31, 2008. The RHIA healthy retired rate and RHIPA rates for 20 to 24 years of service were adopted December 31, 2016. RHIPA Rates up through 14 years of service were first adopted effective December 31, 2012. All other RHIPA rates were first adopted effective December 31, 2014.



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OPSRP

Most of the methods and assumptions adopted for the OPSRP valuation are the same as those used for Tier 1/ Tier 2. The methods and assumptions that differ for OPSRP are summarized below. The Board adopted the following methods, procedures and assumptions for the December 31, 2016 and December 31, 2017 actuarial valuations.

Actuarial Methods and Valuation Procedures

<i>OPSRP UAL amortization</i>	The UAL as of December 31, 2007 is amortized as a level percentage of projected combined valuation payroll (Tier 1/ Tier 2 plus OPSRP payroll) over a closed period 16 year period. Gains and losses between subsequent odd-year valuations are amortized as a level percentage of combined valuation payroll over 16 years from the valuation in which they are first recognized.
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Economic Assumptions

<i>Administrative expenses</i>	\$6.5 million per year is added to the normal cost.
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Demographic Assumptions

Retirement Assumptions

Rates of Retirement from Active Status

Age	Police & Fire			General Service			School Districts		
	< 13 yrs	13-24 yrs	25+ yrs	<15 yrs	15-29 yrs	30+ yrs	<15 yrs	15-29 yrs	30+ yrs
50	0.50%	1.50%	5.50%						
51	0.50%	1.50%	5.50%						
52	0.50%	1.50%	5.50%						
53	0.50%	1.50%	25.00%						
54	0.50%	1.50%	17.50%						
55	2.00%	5.00%	23.50%	1.00%	2.50%	5.00%	1.00%	2.50%	5.00%
56	2.00%	5.00%	23.50%	1.00%	2.50%	5.00%	1.00%	2.50%	5.00%
57	2.00%	5.00%	23.50%	1.00%	2.50%	7.50%	1.00%	2.50%	7.50%
58	4.00%	5.00%	23.50%	1.50%	3.00%	30.00%	1.50%	3.00%	30.00%
59	4.00%	5.00%	23.50%	2.00%	3.00%	25.00%	1.50%	3.00%	25.00%
60	4.00%	15.00%	23.50%	3.00%	3.75%	20.00%	2.50%	3.75%	20.00%
61	4.00%	8.50%	23.50%	3.00%	5.00%	20.00%	3.00%	5.00%	20.00%
62	10.00%	25.00%	38.00%	8.00%	12.00%	30.00%	6.00%	12.00%	30.00%
63	7.00%	17.00%	38.00%	7.00%	10.00%	20.00%	6.00%	10.00%	20.00%
64	7.00%	17.00%	17.00%	7.00%	10.00%	20.00%	6.00%	10.00%	20.00%
65	100.00%	100.00%	100.00%	13.00%	35.00%	20.00%	11.50%	35.00%	20.00%
66				15.50%	33.00%	20.00%	12.50%	33.00%	20.00%
67				15.50%	22.00%	30.00%	11.00%	22.00%	30.00%
68				13.00%	17.00%	20.00%	9.00%	17.00%	20.00%
69				13.00%	17.00%	20.00%	9.00%	17.00%	20.00%
70				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Rates of Retirement from Dormant Status

Dormant members are assumed to retire at their Normal Retirement Age.



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Changes in Actuarial Methods and Assumptions — Tier 1/ Tier 2 and OPSRP

A summary of key changes implemented since the December 31, 2015 valuation are described briefly below. Additional detail and a comprehensive list of changes in methods and assumptions can be found in the 2016 Experience Study for the System, published in July 2017.

Changes in Actuarial Methods and Allocation Procedures

Allocation of Liability for Service Segments

For purposes of allocating Tier 1/Tier 2 members' actuarial accrued liability among multiple employers, the valuation uses a weighted average of the Money Match methodology and the Full Formula methodology used by PERS when the member retires. The weights are determined based on the prevalence of each formula among the current Tier 1/Tier 2 population. For the December 31, 2014 and December 31, 2015 valuations, the Money Match was weighted 25 percent for General Service members and 0 percent for Police & Fire members. For the December 31, 2016 and December 31, 2017 valuations, this weighting has been adjusted to 15 percent for General Service members and 0 percent for Police & Fire members, based on a projection of the proportion of liability attributable to Money Match benefits at those valuation dates.

Changes in Economic Assumptions

Investment Return and Interest Crediting

The assumed investment return and interest crediting to both regular and variable account balances was reduced to 7.20%. Previously, the assumed investment return and interest crediting was 7.50%.

Administrative Expenses

The administrative expense assumptions were updated to \$37.5 million per year for Tier 1/Tier 2 and \$6.5 million per year for OPSRP. Previously these were assumed to be \$33.0 million per year and \$5.5 million per year, respectively.

Healthcare Cost Inflation

The healthcare cost inflation assumption for the maximum RHIPA subsidy was updated based on analysis performed by Milliman's healthcare actuaries. This analysis includes the consideration of the excise tax that will be introduced in 2020 by the Affordable Care Act.

Changes in Demographic Assumptions

Healthy Mortality

The healthy mortality assumption was updated to reflect RP2014 generational mortality tables with group-specific class and setback adjustments, and to use a mortality projection scale based on 60 year unisex average Social Security experience. Previously the assumption was based on RP2000 generational mortality tables with group-specific class and setback adjustments and mortality projection Scale BB.

Disabled Mortality

The disabled mortality assumption was updated to RP2014 disabled tables with generational mortality projected using a mortality projection scale based on 60 year unisex average Social Security experience. Previously the assumption was based on RP2000 disabled tables with generational projection using Scale BB.



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Non-Annuitant Mortality

Non-annuitant mortality assumption was updated to RP2014 employee tables with the same group-specific class and setback adjustments and mortality projection scale as used for the healthy retiree mortality assumption. Previously the assumption was based on applying a group-specific percentage adjustment to the healthy retiree mortality assumption.

Disability, Retirement from Active Status, and Termination

Rates for disability, retirement from active status, and termination were adjusted. The rates at which members are assumed to elect full or partial lump sums or purchase credited service at retirement were also adjusted.

Retiree Healthcare Participation

The RHIA participation rate for healthy retirees was reduced from 38% to 35%. The RHIPA participation rate was updated for members with 20 to 24 years of service.

Merit Increases, Unused Sick Leave, and Vacation Pay

Assumed merit increases were decreased slightly for non-school general service members and police and fire members. Unused Sick Leave and Vacation Pay rates were adjusted.

Schedule of Active Member Valuation Data

Valuation Date	Count	Annual Payroll (in Thousands)	Average Annual Pay	% Increase in Average Pay	Number of Participating Employers ¹
12/31/2007	167,023	\$ 7,721,819	\$ 46,232	3.0%	760
12/31/2008	170,569	\$ 8,130,136	\$ 47,665	3.1%	766
12/31/2009	178,606	\$ 8,512,192	\$ 47,659	0.0%	776
12/31/2010	193,569	\$ 8,750,064	\$ 45,204	-5.2%	787
12/31/2011	170,972	\$ 8,550,511	\$ 50,011	10.6%	791
12/31/2012	167,103	\$ 8,590,879	\$ 51,411	2.8%	798
12/31/2013	162,185	\$ 8,671,835	\$ 53,469	4.0%	799
12/31/2014	164,859	\$ 9,115,767	\$ 55,294	3.4%	802
12/31/2015	168,177	\$ 9,544,132	\$ 56,751	2.6%	804
12/31/2016	172,483	\$ 9,872,557	\$ 57,238	0.9%	805

¹ Effective in 2006, participating employers are defined for this purpose as any employer with covered payroll during the prior year. In prior years, employers with liabilities but without covered payroll were included as well.

Schedule of Retirees and Beneficiaries Added to and Removed from Rolls

Annual Allowances are shown in thousands.

Valuation Date	Added to Rolls		Removed from Rolls		Rolls - End of Year		% Increase in Annual Allowances ²	Average Annual Allowances
	Count	Annual Allowances ¹	Count	Annual Allowances	Count	Annual Allowances		
12/31/2007	³ 5,385	\$ 183,232	3,304	\$ 40,590	106,801	\$ 2,521,345	6.0%	\$ 23,608
12/31/2008	³ 5,963	\$ 171,484	3,626	\$ 47,062	109,138	\$ 2,645,767	4.9%	\$ 24,242
12/31/2009	³ 6,377	\$ 226,713	3,374	\$ 46,228	112,141	\$ 2,826,252	6.8%	\$ 25,203
12/31/2010	³ 6,359	\$ 217,424	3,512	\$ 51,627	114,988	\$ 2,992,048	5.9%	\$ 26,021
12/31/2011	³ 8,715	\$ 282,098	3,679	\$ 55,633	120,024	\$ 3,218,514	7.6%	\$ 26,816
12/31/2012	³ 7,023	\$ 235,917	4,875	\$ 59,353	122,172	\$ 3,395,079	5.5%	\$ 27,789
12/31/2013	9,724	\$ 307,551	3,644	\$ 66,607	128,252	\$ 3,636,023	7.1%	\$ 28,351
12/31/2014	⁴ 6,910	\$ 235,250	3,524	\$ 66,621	131,638	\$ 3,804,651	4.6%	\$ 28,902
12/31/2015	⁴ 8,566	\$ 304,818	3,781	\$ 73,305	136,423	\$ 4,036,165	6.1%	\$ 29,586
12/31/2016	⁴ 6,413	\$ 242,372	3,931	\$ 80,903	138,905	\$ 4,197,633	4.0%	\$ 30,219

¹ Additions to annual allowances reflect the combined effects of new retirements and COLA increases since the previous valuation date.

² Since last valuation date.

³ Annual allowances reflect estimated adjustments to retiree benefits due to the implementation of the *Strunk v. PERB, et al.* and *City of Eugene v. State of Oregon, PERB, et al.* decisions.

⁴ Annual allowances reflect estimated adjustments to retiree benefits for the *Moro v. State of Oregon* decision for records that were not already adjusted in the data provided.

Oregon Public Employees Retirement System

Schedules of Funding Progress by Rate Pool

(dollar amounts in millions)

Actuarial Valuation Date	Actuarial Value of Assets ^{1,2} (a)	Actuarial Accrued Liability (AAL) ² (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll ³ (c)	UAAL as a % of Covered Payroll ((b-a)/c)
Tier 1/Tier 2 State & Local Government Rate Pool						
12/31/2011	\$ 25,679.2	\$ 31,109.1	\$ 5,429.9	82.5%	\$ 3,179.3	170.8%
12/31/2012	\$ 28,022.3	\$ 30,601.9	\$ 2,579.5	91.6%	\$ 3,043.7	84.7%
12/31/2013	\$ 30,590.2	\$ 31,738.8	\$ 1,148.6	96.4%	\$ 2,915.9	39.4%
12/31/2014	\$ 31,162.6	\$ 37,169.9	\$ 6,007.3	83.8%	\$ 2,827.9	212.4%
12/31/2015	\$ 30,185.3	\$ 38,396.8	\$ 8,211.5	78.6%	\$ 2,691.8	305.1%
12/31/2016	\$ 30,417.6	\$ 40,351.3	\$ 9,933.7	75.4%	\$ 2,546.7	390.1%
Tier 1/Tier 2 School District Rate Pool						
12/31/2011	\$ 19,668.2	\$ 23,973.7	\$ 4,305.5	82.0%	\$ 1,880.7	228.9%
12/31/2012	\$ 21,202.1	\$ 22,908.0	\$ 1,705.8	92.6%	\$ 1,769.0	96.4%
12/31/2013	\$ 23,063.3	\$ 23,392.6	\$ 329.4	98.6%	\$ 1,663.0	19.8%
12/31/2014	\$ 23,361.2	\$ 27,059.9	\$ 3,698.7	86.3%	\$ 1,626.0	227.5%
12/31/2015	\$ 22,728.9	\$ 27,670.7	\$ 4,941.8	82.1%	\$ 1,578.8	313.0%
12/31/2016	\$ 22,870.2	\$ 29,152.2	\$ 6,282.0	78.5%	\$ 1,532.7	409.9%
Tier 1/Tier 2 Independent Employers and Judiciary						
12/31/2011	\$ 4,083.2	\$ 5,069.8	\$ 986.6	80.5%	\$ 547.9	180.1%
12/31/2012	\$ 4,479.4	\$ 5,043.4	\$ 564.0	88.8%	\$ 529.0	106.6%
12/31/2013	\$ 4,851.0	\$ 5,164.3	\$ 313.3	93.9%	\$ 494.8	63.3%
12/31/2014	\$ 4,967.4	\$ 6,104.9	\$ 1,137.4	81.4%	\$ 479.2	237.4%
12/31/2015	\$ 4,807.6	\$ 6,327.1	\$ 1,519.5	76.0%	\$ 460.3	330.1%
12/31/2016	\$ 4,856.6	\$ 6,690.8	\$ 1,834.3	72.6%	\$ 437.3	419.5%
OPSRP Rate Pool						
12/31/2011	\$ 840.5	\$ 986.4	\$ 145.9	85.2%	\$ 2,942.6	5.0%
12/31/2012	\$ 1,190.0	\$ 1,795.6	\$ 605.5	66.3%	\$ 3,249.2	18.6%
12/31/2013	\$ 1,630.2	\$ 2,243.3	\$ 613.2	72.7%	\$ 3,598.1	17.0%
12/31/2014	\$ 2,024.6	\$ 3,064.1	\$ 1,039.5	66.1%	\$ 4,182.7	24.9%
12/31/2015	\$ 2,389.1	\$ 3,742.5	\$ 1,353.5	63.8%	\$ 4,813.3	28.1%
12/31/2016	\$ 3,021.4	\$ 4,717.0	\$ 1,695.6	64.1%	\$ 5,355.8	31.7%
Postemployment Healthcare Benefits - Retirement Health Insurance Account						
12/31/2011	\$ 239.6	\$ 461.1	\$ 221.5	52.0%	\$ 5,607.9	3.9%
12/31/2012	\$ 291.6	\$ 471.8	\$ 180.2	61.8%	\$ 5,341.7	3.4%
12/31/2013	\$ 353.5	\$ 473.6	\$ 120.0	74.7%	\$ 5,073.7	2.4%
12/31/2014	\$ 395.9	\$ 468.4	\$ 72.5	84.5%	\$ 4,933.1	1.5%
12/31/2015	\$ 419.3	\$ 465.6	\$ 46.3	90.0%	\$ 4,730.8	1.0%
12/31/2016	\$ 465.0	\$ 463.7	\$ (1.3)	100.3%	\$ 4,516.7	(0.0%)
Postemployment Healthcare Benefits - Retiree Health Insurance Premium Account						
12/31/2011	\$ 4.5	\$ 34.4	\$ 29.9	13.2%	\$ 1,539.5	1.9%
12/31/2012	\$ 4.4	\$ 60.3	\$ 55.9	7.4%	\$ 1,478.4	3.8%
12/31/2013	\$ 5.2	\$ 61.2	\$ 55.9	8.6%	\$ 1,434.5	3.9%
12/31/2014	\$ 7.2	\$ 70.5	\$ 63.3	10.2%	\$ 1,406.3	4.5%
12/31/2015	\$ 11.2	\$ 67.8	\$ 56.6	16.5%	\$ 1,339.4	4.2%
12/31/2016	\$ 19.1	\$ 67.9	\$ 48.8	28.1%	\$ 1,276.0	3.8%

Notes:

¹ Side account assets are included with Tier 1/Tier 2 assets.

² Excludes effect of Multnomah Fire District (net UAAL of \$166 million as of 12/31/2016).

³ Covered payroll shown is payroll for members of the rate pool benefiting from the specified program. For example, Tier 1/Tier 2 School District payroll is only payroll for Tier 1/Tier 2 members and excludes OPSRP. However, UAL is amortized using

⁴ Reflects the transfer in assets and liabilities for new employers that joined the SLGRP effective January 1 following the valuation date.

⁵ The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861, as well as a change in cost method to Entry Age Normal.

⁶ The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in *Moro v. State of Oregon*, which overturned portions of Senate Bills 822 and 861.

Analysis of Financial Experience

Tier 1/Tier 2 Pension Program	\$ Gain (or Loss) for Year	
	2016	2015
Type of Activity		
Retirements from Active Status	\$ 66.9	\$ (65.5)
Active Mortality and Withdrawal	(65.7)	(25.3)
Pay Increases	36.6	(48.3)
Contributions	78.4	46.1
Interest Crediting Experience	(5.4)	53.5
Investment Income	(46.8)	(2,510.3)
Retirement, Mortality and Lump Sums from Dormant Status	(1.8)	(0.2)
Retiree and Beneficiary Mortality	(6.5)	(114.4)
New Entrants	(0.5)	(0.0)
Other	7.8	(42.4)
Gain (or Loss) During Year From Financial Experience	\$ 62.9	\$ (2,706.8)
Non-Recurring Items		
Assumption Changes	(2,096.4)	0.0
Plan Changes	0.0	0.0
Composite Gain (or Loss) During Year	\$ (2,033.5)	\$ (2,706.8)

OPSRP Pension Program	\$ Gain (or Loss) for Year	
	2016	2015
Retirements from Active Status	\$ 2.1	\$ 7.3
Active Mortality and Withdrawal	(22.7)	(19.7)
Pay Increases	0.4	(20.7)
Contributions	18.0	0.8
Investment Income	9.5	(115.2)
Retirement, Mortality and Lump Sums from Dormant Status	1.3	3.0
Retiree and Beneficiary Mortality	0.6	0.8
New Entrants	(79.7)	(82.5)
Other	(18.4)	17.3
Gain (or Loss) During Year From Financial Experience	\$ (88.8)	\$ (208.8)
Non-Recurring Items		
Assumption Changes	(173.7)	0.0
Plan Changes	0.0	0.0
Composite Gain (or Loss) During Year	\$ (262.5)	\$ (208.8)

Oregon Public Employees Retirement System

Analysis of Financial Experience (continued)

Retiree Healthcare Programs	\$ Gain (or Loss) for Year					
	RHIA			RHIPA		
	2016	2015		2016	2015	
Contributions	(0.8)	1.6	\$	2.9	\$	0.2
Investment Income	(1.0)	(22.3)		(0.2)		(0.6)
Other	8.2	8.1		2.7		4.9
Gain (or Loss) During Year From Financial Experience	6.4	(12.6)		5.4		4.5
Non-Recurring Items						
Assumption Changes	(1.5)	0.0		(0.7)		0.0
Composite Gain (or Loss) During Year	\$ 4.9	\$ (12.6)	\$	4.8	\$	4.5

Solvency Test

Tier 1/Tier 2 Pension

Valuation Date	Actuarial Accrued Liability			Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Assets		
	Active Member Contributions	Retired Members and Beneficiaries	Other Members		(1)	(2)	(3)
	(1)	(2)	(3)				
12/31/2011 ¹	\$ 7,779.7	\$ 37,001.1	\$ 15,431.2	\$ 49,327.7	100%	100%	29%
12/31/2012 ²	\$ 7,704.9	\$ 36,377.3	\$ 14,527.4	\$ 53,594.0	100%	100%	65%
12/31/2013 ¹	\$ 7,120.1	\$ 39,116.2	\$ 14,114.1	\$ 58,384.0	100%	100%	86%
12/31/2014 ³	\$ 6,950.4	\$ 46,113.5	\$ 17,331.0	\$ 59,370.6	100%	100%	36%
12/31/2015 ¹	\$ 6,476.8	\$ 48,641.5	\$ 17,335.7	\$ 57,611.0	100%	100%	14%
12/31/2016	\$ 6,168.1	\$ 51,655.5	\$ 18,429.6	\$ 58,037.6	100%	100%	1%

¹ Reflects the transfer in assets and liabilities for new employers that joined the SLGRP effective January 1 following the valuation date.

² The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861, as well as a change in cost method to Entry Age Normal.

³ The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in *Moro v. State of Oregon*, which overturned portions of Senate Bills 822 and 861.

OPSRP Pension

Valuation Date	Actuarial Accrued Liability			Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Assets		
	Active Member Contributions	Retired Members and Beneficiaries	Other Members		(1)	(2)	(3)
	(1)	(2)	(3)				
12/31/2011	\$ 0.0	\$ 15.2	\$ 971.3	\$ 840.5	100%	100%	85%
12/31/2012 ¹	\$ 0.0	\$ 28.6	\$ 1,766.9	\$ 1,190.0	100%	100%	66%
12/31/2013	\$ 0.0	\$ 51.2	\$ 2,192.1	\$ 1,630.2	100%	100%	72%
12/31/2014 ²	\$ 0.0	\$ 92.4	\$ 2,971.6	\$ 2,024.6	100%	100%	65%
12/31/2015	\$ 0.0	\$ 144.6	\$ 3,597.9	\$ 2,389.1	100%	100%	62%
12/31/2016	\$ 0.0	\$ 201.1	\$ 4,515.9	\$ 3,021.4	100%	100%	62%

¹ The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861, as well as a change in cost method to Entry Age Normal.

² The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in *Moro v. State of Oregon*, which overturned portions of Senate Bills 822 and 861.

Oregon Public Employees Retirement System

Solvency Test

Retiree Health Insurance Account (RHIA)											
Actuarial Accrued Liability											
Valuation Date	Active Member Contributions		Retired Members and Beneficiaries		Other Members	Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Assets				
	(1)	(2)	(3)	(4)	(1)		(2)	(3)			
12/31/2011	\$	0.0	\$	332.5	\$	128.6	\$	239.6	0%	72%	0%
12/31/2012 ¹	\$	0.0	\$	338.3	\$	133.5	\$	291.6	0%	86%	0%
12/31/2013	\$	0.0	\$	348.0	\$	125.6	\$	353.5	0%	100%	4%
12/31/2014	\$	0.0	\$	355.1	\$	113.3	\$	395.9	0%	100%	36%
12/31/2015	\$	0.0	\$	357.7	\$	107.9	\$	419.3	0%	100%	57%
12/31/2016	\$	0.0	\$	361.7	\$	102.0	\$	465.0	0%	100%	101%

¹ The 12/31/2012 valuation reflects a change in cost method to Entry Age Normal.

Retiree Health Insurance Premium Account (RHIPA)											
Actuarial Accrued Liability											
Valuation Date	Active Member Contributions		Retired Members and Beneficiaries		Other Members	Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Assets				
	(1)	(2)	(3)	(4)	(1)		(2)	(3)			
12/31/2011	\$	0.0	\$	13.6	\$	20.8	\$	4.5	0%	33%	0%
12/31/2012 ¹	\$	0.0	\$	15.1	\$	45.3	\$	4.4	0%	29%	0%
12/31/2013	\$	0.0	\$	16.1	\$	45.1	\$	5.2	0%	33%	0%
12/31/2014	\$	0.0	\$	15.7	\$	54.9	\$	7.2	0%	46%	0%
12/31/2015	\$	0.0	\$	14.9	\$	52.9	\$	11.2	0%	75%	0%
12/31/2016	\$	0.0	\$	14.4	\$	53.5	\$	19.1	0%	100%	9%

¹ The 12/31/2012 valuation reflects a change in cost method to Entry Age Normal.

Summary of Plan Provisions



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Summary of Plan Provisions

The following section summarizes the plan provisions considered in the actuarial valuation. A more detailed description of plan provisions is available from PERS.

<i>Membership</i>	All employees of public employers participating in this System who are in qualifying positions become members of the System after completing six months of service except those who are eligible for and have elected to participate in an optional retirement plan. Different benefit provisions of the plan apply based on date of hire.	
	Tier 1	Hired prior to 1996
	Tier 2	Hired after 1995 and before August 29, 2003
	OPSRP	Hired after August 28, 2003, and neither a judge nor a former Tier 1/Tier 2 member eligible to reestablish Tier 1/Tier 2 membership
	Judges	Members of the State Judiciary
<i>Member Contributions</i>	Judges	7% of salary
	All others	None
<i>Employer Contributions</i>	Set by the PERS Board based on actuarial calculations that follow Board rate-setting policies for employers.	



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Summary of Chapter 238 Provisions — Tier 1/Tier 2 and Judges

<i>Normal Retirement Date</i>	Police and Fire	Age 55
	Judges	Age 65
	Tier 1 General Service	Age 58
	Tier 2 General Service	Age 60

Normal Retirement Allowance For Members who are not Judges, the greatest of the Full Formula benefit, the Money Match benefit, or the Formula Plus Annuity benefit (only available to Members who made contributions before August 21, 1981). For Members with 15 or more years of creditable service, the benefit will not be less than the minimum service retirement allowance of \$100 per month, as described in ORS 238.310.

Full Formula The percentage multiplier from the table below multiplied by final average salary and years of creditable service plus a prior service pension, if applicable.

Percentage Multiplier	Membership Classification
2.00%	Fire, Police and Legislators
1.67%	All other members

Money Match The Member's account balance and a matching employer amount converted to an actuarially equivalent annuity.

Formula Plus Annuity The Member's account balance converted to an actuarially equivalent cash refund annuity plus the percentage multiplier from the table below multiplied by final average salary and years of creditable service, plus a prior service pension, if applicable.

Percentage Multiplier	Membership Classification
1.35%	Fire, Police and Legislators
1.00%	All other members



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Normal Retirement Allowance (continued)

Judges

Final average salary multiplied by the first percentage multiplier from the table below for up to 16 years of service plus the second percentage multiplier for any service in excess of 16 years, but not to exceed the maximum percentage of final average salary also shown below. Judges must elect Plan A or Plan B no later than age 60. A "Plan B" judge must serve as a pro tem judge for a total of 175 days postretirement.

Plan	Percentage Factor (up to 16 years)	Percentage Factor (after 16 years)	Maximum Percentage of Final Average Salary
A	2.8125%	1.67%	65%
B	3.75%	2.00%	75%

Final Average Salary

The greater of:

- Average salary earned during the three calendar years in which the member was paid the highest salary, even if one of those years is less than a full calendar year.
- Total salary earned over the last 36 months of employment divided by the actual months of service during that 36 month period.

Covered salary for this purpose includes the value of member contributions assumed and paid by employers, any payment due to an employer's participation in the Unused Sick Leave program, and, for Tier 1 members, lump sum payment of unused vacation time.

Creditable Service

The number of years and months an active Member is paid a salary by a participating PERS employer and PERS benefits are being funded.

Prior Service Pension

Benefits payable on account of Prior Service Credit for a member's service with a participating employer prior to the employer's participation in PERS, as described in ORS 238.442.

SB 656/ HB 3349 Adjustment

All members receive an increase to their monthly retirement benefit equal to the greater of the increase under Senate Bill 656 (SB 656) or House Bill 3349 (HB 3349). The adjustment for SB 656 only applies to members who established membership prior to July 14, 1995. Senate Bill 822, enacted in 2013, limits eligibility for these adjustments to only PERS beneficiaries who pay Oregon state income tax.

SB 656 Increase

Years of Service	General Service	Police & Fire
0-9	0.0%	0.0%
10-14	1.0	1.0
15-19	1.0	1.0
20-24	2.0	2.5
25-29	3.0	4.0
30 & Over	4.0	4.0

HB 3349 Increase

$$\left(\frac{1}{1 - \text{maximum Oregon personal income tax rate (limited to 9\%)}} - 1 \right) \times \frac{\text{Service prior to October 1, 1991}}{\text{All Service}}$$



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Milliman Actuarial Valuation

Summary of Plan Provisions

<i>Early Retirement Eligibility</i>	Police and Fire	Age 50 or 30 years of service
	Judges	Age 60
	General Service	Age 55 or 30 years of service
<i>Early Retirement Allowance</i>	Normal retirement allowance, actuarially reduced to early retirement age. However, there is no reduction applied if a member has completed 30 years of service (25 years for police & fire members) or for judges in Plan B.	
<i>Vesting</i>	Contributions made in any part of five calendar years or attainment of age 50 (45 for police & fire) while working in a qualifying position.	
<i>Termination Benefits</i>	Non-Vested	Payment of member's account balance.
	Vested	Same as normal (or early) retirement allowance, but commencement is deferred to normal (or early) retirement date.
<i>Optional Forms of Retirement Allowance</i>	The normal form of benefit is a cash refund annuity (joint and two-thirds survivor contingent annuity for a married judge). All optional amounts are adjusted to be actuarially equivalent.	
	Options Available	
	<ul style="list-style-type: none"> • Life annuity • Cash refund annuity • Life annuity guaranteed 15 years • Joint and 50% or 100% survivor contingent annuity, with or without pop-up feature • Partial Lump Sum: Refund of member contribution account balance plus a pension (under any optional form) of employer-paid portion of the Full Formula or Money Match annuity. • Total Lump Sum: Refund of member contribution account plus a matching employer amount. 	
<i>Preretirement Death Benefit Eligibility</i>	Judges	Six or more years of service.
	All others	Death occurring while the member is an employee of a participating employer or within 120 days of termination provided the employee does not withdraw the account balance or retire, or a result of injuries received while in the service of a participating employer.
<i>Preretirement Death Benefit</i>	Judges	The spouse shall receive a life pension equal to two-thirds of the service retirement allowance. The beneficiary of an unmarried judge shall receive the member's accumulated contributions with interest.
	All others	The member's account balance plus a matching employer amount.
<i>Additional Police & Fire Death Benefits</i>	Upon the death of a retired police officer or firefighter, the surviving spouse or dependent children under age 18 will receive a monthly benefit based on 25% of the cash refund retirement allowance due to police and fire service.	
<i>Disability Benefit Eligibility</i>	Duty	Disablement occurring as a direct result of a job-related injury or illness, regardless of length of service.
	Non-Duty	Disablement occurring after ten years of service (six years, if a judge), but prior to normal retirement eligibility.



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<i>Disability Benefits</i>	<p>The normal retirement allowance calculated based on the service credit that would have been earned if the member had continued working to age 58 (age 55 for police and fire, age 65 for judge members) payable commencing immediately.</p> <p>Fire and Police Members' Alternative</p> <p>In lieu of the above, firefighters and police officers who qualify for duty disability may elect to receive a benefit of 50% of final average monthly salary at the time of disablement.</p> <p>Minimum Monthly Retirement Allowance</p> <p>Judges 45% of final average monthly salary.</p> <p>All others \$100 for a member with at least 15 years of creditable service, actuarially reduced if an optional form of benefit is chosen.</p> <p>Reduction of Benefits</p> <p>Whenever a disabled employee's disability benefit and earned income for any month exceed the monthly salary received at the time of disablement or \$400, if greater, the disability benefit will be reduced by the excess.</p> <p>For Tier Two members, the disability benefit may not exceed the member's salary at the time of disablement.</p>
<i>Waiting Time Service Purchases</i>	<p>Members with at least 10 years of combined credited and/or prior service under PERS may elect to purchase service credit for the six-month "waiting time" period worked prior to establishing membership in the system. The waiting time purchase is interest-free and must be purchased in one payment prior to retirement.</p>
<i>Police & Fire Unit Purchases</i>	<p>Police & fire members may purchase 60-month annuity benefits (up to \$80 per month) that must be paid out by age 65 and cannot commence prior to the earliest retirement age. The amount purchased by the member is matched by the employer. In certain situations, such as termination of employment prior to retiring, or working beyond age 65, the employer's matching purchase is forfeited.</p>
<i>Automatic Postretirement Cost of Living Adjustments (COLAs)</i>	<p>All monthly pension and annuity benefits except unit purchases are eligible for postretirement adjustments. As a result of the Senate Bills 822 and 861 and the Oregon Supreme Court decision in <i>Moro v. State of Oregon</i>, automatic postretirement adjustments are based on a blended COLA as described below.</p> <p>Automatic COLA prior to SB 822 and SB 861</p> <p>Benefits were adjusted annually to reflect the increase or decrease in the Consumer Price Index (Portland area - all items) as published by the Bureau of Labor Statistics.</p> <p>The maximum adjustment to be made for any year was 2% of the previous year's benefit. Any CPI change in excess of the limit was accumulated for future benefit adjustments which would otherwise be less than the limit. No benefit was decreased below its original amount.</p> <p>Automatic Adjustments Provided by Senate Bills 822 and 861</p> <p>This legislation, passed in 2013, provided for that benefits would be increased annually based on a marginal rate schedule. The increase is calculated as 1.25% on the first \$60,000 of annual benefit and 0.15% on amounts above \$60,000 of annual benefit.</p>



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	Blended COLA after Moro decision	The Supreme Court decision in <i>Moro</i> requires that members “will be entitled to receive during retirement a blended COLA rate that reflects the different COLA provisions applicable to benefits earned at different times.” The Supreme Court did not articulate a specific methodology for determining the blended COLA. For purposes of this valuation, we have determined the blend based on creditable service earned before and after October 2013. This approach is consistent with OAR 459-005-0510 adopted by the PERS Board in September 2015.
<i>Ad Hoc Adjustments</i>		From time to time, as granted by the Legislature, retired members and beneficiaries have received increases in their monthly benefits.
<i>Variable Annuity Program</i>	Contributions	Prior to January 1, 2004, a member could elect to have 25, 50 or 75 percent of his or her contributions invested in the variable account.
	Benefit	At retirement, a member may elect to receive a variable annuity with the funds accumulated in his or her variable account. Alternatively, a member may elect to have all or a portion of the funds in his or her variable account transferred back to the regular account and receive an annuity from the System as though no variable annuity program existed. The employer-provided benefit, however, is based on the earnings the member would have received in the regular account.
<i>Interest Credit on Member Accounts</i>	Tier 1 Regular	Actuarially assumed rate of return until the rate guarantee reserve has been fully funded for three consecutive years and the Board elects to credit additional interest.
	Tier 2 Regular	Amount determined by the Board based on actual investment earnings of the regular account.
	Variable	Actual earnings in variable account.
<i>Retiree Healthcare – Medicare Supplement (RHIA)</i>	Retiree Eligibility	All of the following must be met: (a) Currently receiving a retirement allowance from the System, (b) Covered for eight years before retirement, (c) Enrolled in a PERS-sponsored health plan, and (d) Enrolled in both Medicare Part A and Part B.
	Surviving Spouse or Dependent Eligibility	A surviving spouse or dependent of a deceased RHIA-eligible retiree is eligible for RHIA benefits if they are enrolled in both Medicare Part A and Part B, and <i>either</i> of the following criteria are met: (a) Currently receiving a retirement allowance from the System, or (b) The surviving spouse or dependent was covered under the eligible retiree’s PERS-sponsored health insurance at the time of the retiree’s death and the deceased retiree retired before May 1, 1991.



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	Benefit Amount	A monthly contribution of up to \$60 per retiree is applied to PERS-sponsored Medicare supplemental insurance costs.
<i>Retiree Healthcare – Under Age 65 (RHIPA)</i>	Retiree Eligibility	Retired PERS members who were state employees at the time of retirement, are enrolled in a PERS-sponsored health plan, and are not eligible for Medicare.
	Surviving Spouse or Dependent Eligibility	A surviving spouse or dependent of a deceased RHIPA-eligible retiree is eligible for RHIPA benefits if they are not yet eligible for Medicare, and <i>either</i> of the following criteria are met: (a) Currently receiving a retirement allowance from the System, or (b) The surviving spouse or dependent was covered under the eligible retiree’s PERS-sponsored health plan at the time of the retiree’s death and the deceased retiree retired on or after September 29, 1991.
	Benefit	A percentage (as shown in the table below) of the maximum monthly subsidy based on years of service. The maximum monthly subsidy is calculated annually as the average difference between the health insurance premiums paid by active state employees and the premium retirees would pay if they were rated separately from active state employees. The maximum monthly subsidy for 2016 is \$326.94 per month.

Years of Service with State Employer	Subsidized Amount
Under 8	0%
8-9	50%
10-14	60%
15-19	70%
20-24	80%
25-29	90%
30 & Over	100%

Changes in Plan Provisions There were no changes in the Tier 1/Tier 2 benefit provisions reflected since the December 31, 2015 actuarial valuation.



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Milliman Actuarial Valuation
Summary of Chapter 238A Provisions — OPSRP

<i>Normal Retirement Date</i>	Police & Fire	Age 60 or age 53 with 25 years of retirement credit
	General Service	Age 65 or age 58 with 30 years of retirement credit
	School Districts	Age 65 or age 58 with 30 calendar years of active membership
<i>Normal Retirement Allowance</i>	A single life annuity equal to final average salary times years of retirement credit attributable to service as fire and police times 1.8% plus final average salary times all other years of retirement credit times 1.5%	
<i>Final Average Salary</i>	<p>The greater of:</p> <ul style="list-style-type: none"> • Average salary earned during the three calendar years in which the member was paid the highest salary, even if one of those years is less than a full calendar year. • Total salary earned over the last 36 months of employment divided by the actual months of service during that 36 month period. <p>Covered salary for this purpose includes base pay, plus overtime up to an average amount, plus bonuses, plus member contributions paid by the employer on a salary reduction basis. Excludes payments of unused vacation or accumulated sick leave at retirement, and member contributions “assumed and paid” by the employer.</p>	
<i>Early Retirement Eligibility</i>	Police & Fire	Age 50 and 5 years of vesting service
	General Service	Age 55 and 5 years of vesting service
<i>Early Retirement Allowance</i>	Normal retirement allowance, actuarially reduced to early retirement age.	
<i>Vesting</i>	Five years or attainment of normal retirement age.	
<i>Vested Termination Benefit</i>	Same as normal (or early) retirement allowance, but commencement is deferred to normal (or early) retirement date.	
<i>Optional Forms of Retirement Benefit</i>	<p>The normal form of benefit is a life annuity. All optional amounts are adjusted to be actuarially equivalent.</p> <p>Options Available</p> <ul style="list-style-type: none"> • Life annuity • Joint and 50% or 100% survivor contingent benefit, with or without pop-up feature • Lump sum if monthly normal retirement benefit is less than \$200 or if lump sum value is less than \$5,000. 	
<i>Preretirement Death Benefit Eligibility</i>	Death of a vested member before retirement benefits begin.	
<i>Preretirement Death Benefit</i>	If member was eligible for early retirement, the actuarial equivalent of 50% of the early retirement benefit the participant was eligible to receive at date of death. If member was not eligible for early retirement, the actuarial equivalent of 50% of the early retirement benefit the participant would have been eligible to receive if he terminated employment on his date of death and retired at the earliest possible date.	



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Milliman Actuarial Valuation

<i>Disability Benefit Eligibility</i>	Duty	Disablement occurring as a direct result of a job-related injury or illness, regardless of length of service.
	Non-Duty	Disablement occurring after ten years of service, but prior to normal retirement eligibility.
<i>Disability Benefit Amounts</i>	Preretirement Benefit	45% of salary during last full month of employment before disability, reduced if the total benefit exceeds 75% of salary. Benefit is payable monthly until normal retirement age.
	Retirement Benefit	Same formula as Normal Retirement Benefit, except: Final average salary is adjusted to reflect cost-of-living increases from date of disability to normal retirement age, and Retirement credits continue to accrue from date of disability to normal retirement age.
<i>Postretirement Adjustments</i>		All monthly pension and annuity benefits except unit purchases are eligible for postretirement adjustments. As a result of the Senate Bills 822 and 861 and the Oregon Supreme Court decision in <i>Moro v. State of Oregon</i> , automatic postretirement adjustments are based on a blended COLA as described below.
	Automatic COLA prior to SB 822 and SB 861	Benefits were adjusted annually to reflect the increase or decrease in the Consumer Price Index (Portland area - all items) as published by the Bureau of Labor Statistics. The maximum adjustment to be made for any year was 2% of the previous year's benefit. Any CPI change in excess of the limit was accumulated for future benefit adjustments which would otherwise be less than the limit. No benefit was decreased below its original amount.
	Automatic Adjustments Provided by Senate Bills 822 and 861	This legislation, passed in 2013, provided for that benefits would be increased annually based on a marginal rate schedule. The increase is calculated as 1.25% on the first \$60,000 of annual benefit and 0.15% on amounts above \$60,000 of annual benefit.
<i>Changes in Plan Provisions</i>	There were no changes in the OPSRP benefit provisions reflected since the December 31, 2015 actuarial valuation.	



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Statistical Section

Oregon Public Employees Retirement System

Statistical Notes

The statistical section of the Oregon Public Employees Retirement System (PERS or the System) CAFR presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information says about the System's overall financial health. The data presented was extracted from the PERS' information systems.

Financial Trends

These schedules contain trend information to help the reader understand how the System's financial performance and wellbeing have changed over time. Financial information is presented on an accrual basis.

The Schedules of Additions by Source, Deductions by Type, and Changes in Fiduciary Net Position are presented on both a fiscal and calendar year basis. The System prepares its financial statements on a fiscal-year basis but has its actuarial valuations performed on a calendar-year basis.

The Schedule of Benefit Expenses by Type provides additional detail of benefit expense for fiscal years reported in the aggregate in the Schedules of Expenses by Type.

The Schedule of Earnings and Crediting at December 31 shows earnings available for crediting net of administrative expenses and the rates approved by the Board for the programs it administers.

Operating Information

These schedules contain data to help illustrate how the information in the System's financial reports relates to the services the System provides and the activities it performs.

The Schedule of Average OPEB Benefits for Retirement Health Insurance Account and Schedule of Average OPEB Benefits for Retiree Health Insurance Premium Account show the average monthly other post-employment healthcare benefits, and the number of retirees receiving benefits under each plan.

The Schedule of Average Defined Benefit Pension Payments presents average monthly benefits, final average salary, and number of retirees still receiving benefits, by year of retirement.

The Schedule of Benefit Recipients by Benefit Type shows retired members by benefit level, benefit type, and payment option selected.

The Schedule of Retirement System Membership shows demographics of membership over a period of time. The fiscal year schedule shows membership over the last seven years. The calendar-year schedule is in five-year increments going back to 1985.

The Schedule of Principal Participating Employers shows the 10 employers with the largest number of current employees, along with aggregate information for the remaining employers with current employees.

The Schedule of Participating Employers lists all employers as of June 30, 2017, to show public employers of the state of Oregon participating in PERS.

**Additions by Source - Retirement Programs
For the Last Ten Years Ended June 30:**

Defined Benefit Pension Plan

Fiscal Year	Member Contributions	Employer Contributions		Net Investment and Other Income	Total ¹
		Dollars ¹	Percent of Annual Covered Payroll		
2008	\$ 11,937,362	\$ 763,164,823	10.30 %	\$ (2,804,736,029)	\$ (2,029,633,844)
2009	8,452,030	649,706,891	7.88	(12,903,220,545)	(12,245,061,624)
2010	13,600,476	433,268,434	4.88	7,279,890,664	7,726,759,574
2011	14,024,484	424,101,414	5.30	10,931,390,952	11,369,516,850
2012	16,534,650	1,455,729,689	9.69	380,749,755	1,853,014,094
2013	16,985,722	834,161,587	10.26	6,949,742,064	7,800,889,373
2014	15,319,270	915,236,878	10.54	9,886,700,639	10,817,256,787
2015	13,785,439	1,123,256,703	12.25	2,364,479,372	3,501,521,514
2016	14,214,341	977,332,329	10.37	413,915,853	1,405,462,523
2017	13,177,984	1,022,201,249	10.18	7,660,055,575	8,695,434,808

**Oregon Public Service Retirement Plan
Individual Account Program**

Fiscal Year	Member Contributions	Employer Contributions		Net Investment and Other Income	Total
		Dollars	Percent of Annual Covered Payroll		
2008	\$ 465,517,744	\$ N/A	N/A %	\$ (54,596,058)	\$ 410,921,686
2009	495,933,952	N/A	N/A	(553,146,972)	(57,213,020)
2010	505,922,492	N/A	N/A	393,651,362	899,573,854
2011	513,715,949	N/A	N/A	735,695,057	1,249,411,006
2012	516,174,983	N/A	N/A	71,535,911	587,710,894
2013	510,796,006	N/A	N/A	635,350,054	1,146,146,060
2014	527,303,202	N/A	N/A	977,439,367	1,504,742,569
2015	563,417,649	N/A	N/A	276,949,224	840,366,873
2016	566,450,233	N/A	N/A	76,509,002	642,959,235
2017	605,277,281	N/A	N/A	948,360,842	1,553,638,123

Deferred Compensation Plan

Fiscal Year	Member Contributions	Employer Contributions		Net Investment and Other Income	Total
		Dollars	Percent of Annual Covered Payroll		
2008	\$ 70,448,534	\$ N/A	N/A %	\$ (74,030,166)	\$ (3,581,632)
2009	66,727,977	N/A	N/A	(142,099,959)	(75,371,982)
2010	66,708,970	N/A	N/A	84,417,201	151,126,171
2011	73,291,691	N/A	N/A	176,999,516	250,291,207
2012	80,632,698	N/A	N/A	9,841,830	90,474,528
2013	74,248,188	N/A	N/A	135,572,819	209,821,007
2014	92,174,335	N/A	N/A	203,181,598	295,355,933
2015	99,796,739	N/A	N/A	48,617,428	148,414,167
2016	107,286,636	N/A	N/A	3,166,856	110,453,492
2017	121,701,967	N/A	N/A	189,041,478	310,743,445

¹Amounts and balance restated for fiscal year 2012 due to prior period adjustment.

Oregon Public Employees Retirement System

Deductions by Type - Retirement Programs

For the Last Ten Years Ended June 30:

Defined Benefit Pension Plan

Fiscal Year	Benefits	Administrative Expenses ¹	Refunds	Total ¹
2008	\$ 2,768,305,300	\$ 27,061,038	\$ 50,660,781	\$ 2,846,027,119
2009	2,790,218,464	26,195,676	36,548,963	2,852,963,103
2010	2,915,568,801	28,512,343	25,692,404	2,969,773,548
2011	3,203,938,769	29,256,747	26,487,226	3,259,682,742
2012	3,295,709,818	33,102,667	34,020,450	3,362,832,935
2013	3,556,059,999	33,505,928	17,439,568	3,607,005,495
2014	3,837,870,411	31,247,350	25,560,094	3,894,677,855
2015	3,927,167,032	35,739,837	16,481,215	3,979,388,084
2016	4,193,307,712	40,567,225	13,154,578	4,247,029,515
2017	4,346,282,735	43,546,184	15,961,744	4,405,790,663

Oregon Public Service Retirement Plan

Individual Account Program

Fiscal Year	Benefits	Administrative Expenses	Refunds	Total
2008	\$ 55,478,104	\$ 7,871,419	\$ N/A	\$ 63,349,523
2009	49,534,423	8,413,392	N/A	57,947,815
2010	72,802,216	7,673,682	N/A	80,475,898
2011	133,970,603	6,810,487	N/A	140,781,090
2012	224,729,644	7,698,098	N/A	232,427,742
2013	241,326,511	7,093,871	N/A	248,420,382
2014	330,535,801	6,934,980	N/A	337,470,781
2015	319,978,740	7,565,611	N/A	327,544,351
2016	364,549,091	8,478,008	N/A	373,027,099
2017	417,119,098	9,481,014	N/A	426,600,112

Deferred Compensation Plan

Fiscal Year	Benefits	Administrative Expenses	Refunds	Total
2008	\$ 50,366,273	\$ 800,668	\$ N/A	\$ 51,166,941
2009	38,858,335	816,033	N/A	39,674,368
2010	45,901,913	889,647	N/A	46,791,560
2011	55,929,452	1,326,224	N/A	57,255,676
2012	61,465,377	417,776	N/A	61,883,153
2013	70,550,942	874,584	N/A	71,425,526
2014	89,652,030	997,202	N/A	90,649,232
2015	84,177,564	1,018,468	N/A	85,196,032
2016	91,351,490	1,202,786	N/A	92,554,276
2017	97,089,531	1,330,947	N/A	98,420,478

¹Balances are restated for fiscal years 2008 and 2009 due to prior period adjustments.

**Changes in Fiduciary Net Position - Retirement Programs
For the Last Ten Years Ended June 30:**

Defined Benefit Pension Plan

Fiscal Year	Additions	Deductions	Net Change	Net Position ¹	
				Beginning of Year	End of Year
2008	\$ (2,029,633,844)	\$ 2,846,027,119	\$ (4,875,660,963)	\$ 62,901,714,251	\$ 58,026,053,288
2009	(12,245,061,624)	2,852,963,103	(15,098,024,727)	58,026,053,288	42,928,028,561
2010	7,726,759,574	2,969,773,548	4,756,986,026	42,928,028,561	47,685,014,587
2011	11,369,516,850	3,259,682,742	8,109,834,108	47,685,014,587	55,794,848,695
2012	1,853,014,094	3,362,832,935	(1,509,818,841)	55,794,848,695	54,285,029,854
2013	7,800,889,373	3,607,005,495	4,193,883,878	54,285,029,854	58,478,913,732
2014	10,817,256,787	3,894,677,855	6,922,578,932	58,478,913,732	65,401,492,664
2015	3,501,521,514	3,979,388,084	(477,866,570)	65,401,492,664	64,923,626,094
2016	1,405,462,523	4,247,029,515	(2,841,566,992)	64,923,626,094	62,082,059,102
2017	8,695,434,808	4,405,790,663	4,289,644,145	62,082,059,102	66,371,703,247

**Oregon Public Service Retirement Plan
Individual Account Program**

Fiscal Year	Additions	Deductions	Net Change	Net Position	
				Beginning of Year	End of Year
2008	\$ 410,921,686	\$ 63,349,523	\$ 347,572,163	\$ 1,876,697,448	\$ 2,224,269,611
2009	(57,213,020)	57,947,815	(115,160,835)	2,224,269,611	2,109,108,776
2010	899,573,854	80,475,898	819,097,956	2,109,108,776	2,928,206,732
2011	1,249,411,006	140,781,090	1,108,629,916	2,928,206,732	4,036,836,648
2012	587,710,894	232,427,742	355,283,152	4,036,836,648	4,392,119,800
2013	1,146,146,060	248,420,382	897,725,678	4,392,119,800	5,289,845,478
2014	1,504,742,569	337,470,781	1,167,271,788	5,289,845,478	6,457,117,266
2015	840,366,873	327,544,351	512,822,522	6,457,117,266	6,969,939,788
2016	642,959,235	373,027,099	269,932,136	6,969,939,788	7,239,871,924
2017	1,553,638,123	426,600,112	1,127,038,011	7,239,871,924	8,366,909,935

Deferred Compensation Plan

Fiscal Year	Additions	Deductions	Net Change	Net Position	
				Beginning of Year	End of Year
2008	\$ (3,581,632)	\$ 51,166,941	\$ (54,748,573)	\$ 977,401,037	\$ 922,652,464
2009	(75,371,982)	39,674,368	(115,046,350)	922,652,464	807,606,114
2010	151,126,171	46,791,560	104,334,611	807,606,114	911,940,725
2011	250,291,207	57,255,676	193,035,531	911,940,725	1,104,976,256
2012	90,474,528	61,883,153	28,591,375	1,104,976,256	1,133,567,631
2013	209,821,007	71,425,526	138,395,481	1,133,567,631	1,271,963,112
2014	295,355,933	90,649,232	204,706,701	1,271,963,112	1,476,669,813
2015	148,414,167	85,196,032	63,218,135	1,476,669,813	1,539,887,948
2016	110,453,492	92,554,276	17,899,216	1,539,887,948	1,557,787,164
2017	310,743,445	98,420,478	212,322,967	1,557,787,164	1,770,110,131

¹Balances are restated for fiscal years 2008, 2009, and 2012 due to prior period adjustments.

Oregon Public Employees Retirement System

Additions by Source - OPEB

For the Last Ten Years Ended June 30:

Retirement Health Insurance Account

Fiscal Year	Member Contributions	Employer Contributions		Net Investment and Other Income	Total
		Dollars	Percent of Annual Covered Payroll		
2008	\$ N/A	\$ 27,783,093	0.37 %	\$ (10,246,057)	\$ 17,537,036
2009	N/A	28,812,705	0.37	(52,278,868)	(23,466,163)
2010	N/A	22,351,240	0.29	31,145,418	53,496,658
2011	N/A	22,176,966	0.29	47,359,659	69,536,625
2012	N/A	46,464,958	0.54	3,023,553	49,488,511
2013	N/A	47,294,060	0.57	35,636,711	82,930,771
2014	N/A	48,253,398	0.56	56,194,217	104,447,615
2015	N/A	53,648,437	0.59	15,606,876	69,255,313
2016	N/A	44,587,963	0.47	4,246,552	48,834,515
2017	N/A	49,785,501	0.50	57,566,224	107,351,725

Retiree Health Insurance Premium Account

Fiscal Year	Member Contributions	Employer Contributions		Net Investment and Other Income	Total
		Dollars	Percent of Annual Covered Payroll		
2008	\$ N/A	\$ 1,791,179	0.10 %	\$ (312,725)	\$ 1,478,454
2009	N/A	2,005,173	0.10	(1,578,384)	426,789
2010	N/A	1,496,640	0.08	939,274	2,435,914
2011	N/A	1,428,453	0.08	1,135,114	2,563,567
2012	N/A	3,378,230	0.13	16,723	3,394,953
2013	N/A	3,443,805	0.14	499,279	3,943,084
2014	N/A	6,149,608	0.24	739,056	6,888,664
2015	N/A	6,887,258	0.25	266,949	7,154,207
2016	N/A	10,966,837	0.39	228,057	11,194,894
2017	N/A	11,863,776	0.39	2,027,506	13,891,282

Deductions by Type - OPEB
For the Last Ten Years Ended June 30:

Retirement Health Insurance Account

Fiscal Year	Benefits¹	Administrative Expenses	Refunds	Total
2008	\$ 27,624,361	\$ 899,601	\$ N/A	\$ 28,523,962
2009	28,262,580	958,311	N/A	29,220,891
2010	28,821,539	974,988	N/A	29,796,527
2011	29,251,771	1,039,603	N/A	30,291,374
2012	29,935,920	963,843	N/A	30,899,763
2013	30,777,470	1,149,475	N/A	31,926,945
2014	34,112,567	1,044,937	N/A	35,157,504
2015	31,922,820	1,279,427	N/A	33,202,247
2016	33,602,540	1,256,017	N/A	34,858,557
2017	31,186,802	1,288,059	N/A	32,474,861

Retiree Health Insurance Premium Account

Fiscal Year	Benefits¹	Administrative Expenses	Refunds	Total
2008	\$ 1,906,431	\$ 104,880	\$ N/A	\$ 2,011,311
2009	1,926,236	115,770	N/A	2,042,006
2010	2,307,058	103,645	N/A	2,410,703
2011	3,024,382	161,559	N/A	3,185,941
2012	3,885,769	71,981	N/A	3,957,750
2013	4,093,736	169,137	N/A	4,262,873
2014	4,925,743	170,901	N/A	5,096,644
2015	4,230,808	188,598	N/A	4,419,406
2016	4,682,975	259,850	N/A	4,942,825
2017	4,327,944	285,895	N/A	4,613,839

¹ Benefit payments paid by RHIA and RHIPA consisted of Healthcare Premium Subsidies exclusively.

Oregon Public Employees Retirement System

**Changes in Plan Fiduciary Net Position - OPEB
For the Last Ten Years Ended June 30:**

Retirement Health Insurance Account

Fiscal Year	Additions	Deductions	Net Change	Net Position	
				Beginning of Year	End of Year
2008	\$ 17,537,036	\$ 28,523,962	\$ (10,986,926)	\$ 248,719,627	\$ 237,732,701
2009	(23,466,163)	29,220,891	(52,687,054)	237,732,701	185,045,647
2010	53,496,658	29,796,527	23,700,131	185,045,647	208,745,778
2011	69,536,625	30,291,374	39,245,251	208,745,778	247,991,029
2012	49,488,511	30,899,763	18,588,748	247,991,029	266,579,777
2013	82,930,771	31,926,945	51,003,826	266,579,777	317,583,603
2014	104,447,615	35,157,504	69,290,111	317,583,603	386,873,714
2015	69,255,313	33,202,247	36,053,066	386,873,714	422,926,780
2016	48,834,515	34,858,557	13,975,958	422,926,780	436,902,738
2017	107,351,725	32,474,861	74,876,864	436,902,738	511,779,602

Retiree Health Insurance Premium Account

Fiscal Year	Additions	Deductions	Net Change	Net Position	
				Beginning of Year	End of Year
2008	\$ 1,478,454	\$ 2,011,311	\$ (532,857)	\$ 7,867,416	\$ 7,334,559
2009	426,789	2,042,006	(1,615,217)	7,334,559	5,719,342
2010	2,435,914	2,410,703	25,211	5,719,342	5,744,553
2011	2,563,567	3,185,941	(622,374)	5,744,553	5,122,179
2012	3,394,953	3,957,750	(562,797)	5,122,179	4,559,382
2013	3,943,084	4,262,873	(319,789)	4,559,382	4,239,593
2014	6,888,664	5,096,644	1,792,020	4,239,593	6,031,613
2015	7,154,207	4,419,406	2,734,801	6,031,613	8,766,414
2016	11,194,894	4,942,825	6,252,069	8,766,414	15,018,483
2017	13,891,282	4,613,839	9,277,443	15,018,483	24,295,926

Additions by Source - Retirement Programs
For the Last Ten Years Ended December 31¹:

Defined Benefit Pension Plan

Calendar Year	Member Contributions	Employer Contributions		Net Investment and Other Income	Total
		Dollars	Percent of Annual Covered Payroll		
2007	\$ 16,130,758	\$ 744,532,532	10.47 %	\$ 5,587,420,758	\$ 6,348,084,048
2008	7,316,509	639,128,268	7.86	(16,483,601,895)	(15,837,157,118)
2009	11,209,060	561,305,422	6.59	8,054,309,024	8,626,823,506
2010	14,327,206	411,590,742	4.61	6,018,828,853	6,444,746,801
2011	15,771,376	593,451,757	6.85	1,189,044,156	1,798,267,289
2012	14,148,372	862,934,319	10.99	7,201,022,711	8,078,105,402
2013	18,664,061	1,496,033,607	17.68	8,595,803,270	10,110,500,938
2014	13,200,528	937,788,619	10.48	4,342,718,450	5,293,707,597
2015	14,362,049	1,127,799,421	12.25	1,232,493,098	2,374,654,568
2016	13,085,105	976,297,293	10.17	4,290,378,888	5,279,761,286

Oregon Public Service Retirement Plan
Individual Account Program

Calendar Year	Member Contributions	Employer Contributions		Net Investment and Other Income	Total
		Dollars	Percent of Annual Covered Payroll		
2007	\$ 451,403,761	\$ N/A	N/A %	\$ 197,649,097	\$ 649,052,858
2008	476,238,379	N/A	N/A	(681,055,059)	(204,816,680)
2009	504,209,955	N/A	N/A	435,988,065	940,198,020
2010	502,322,036	N/A	N/A	400,883,000	903,205,036
2011	518,199,449	N/A	N/A	96,058,972	614,258,421
2012	499,094,923	N/A	N/A	623,896,684	1,122,991,607
2013	542,566,655	N/A	N/A	814,928,040	1,357,494,695
2014	511,048,423	N/A	N/A	450,087,155	961,135,578
2015	596,936,756	N/A	N/A	140,226,970	737,163,726
2016	597,188,543	N/A	N/A	518,172,223	1,115,360,766

Deferred Compensation Plan

Calendar Year	Member Contributions	Employer Contributions		Net Investment and Other Income	Total
		Dollars	Percent of Annual Covered Payroll		
2007	\$ 67,874,937	\$ N/A	N/A %	\$ 65,816,348	\$ 133,691,285
2008	72,316,124	N/A	N/A	(268,310,470)	(195,994,346)
2009	63,087,307	N/A	N/A	147,674,587	210,761,894
2010	67,994,065	N/A	N/A	82,812,783	150,806,848
2011	75,619,604	N/A	N/A	35,406,816	111,026,420
2012	78,115,678	N/A	N/A	105,067,553	183,183,231
2013	88,901,454	N/A	N/A	207,310,080	296,211,534
2014	92,495,435	N/A	N/A	102,188,822	194,684,257
2015	97,373,493	N/A	N/A	15,087,160	112,460,653
2016	109,040,225	N/A	N/A	83,913,037	192,953,262

¹Calendar year-end information is provided because earnings are distributed as of December 31.

Oregon Public Employees Retirement System

Deductions by Type - Retirement Programs

For the Last Ten Years Ended December 31¹:

Defined Benefit Pension Plan

Calendar Year	Benefits	Administrative Expenses ²	Refunds	Total
2007	\$ 2,630,279,015	\$ 31,358,911	\$ 38,197,392	\$ 2,699,835,318
2008	2,784,164,757	24,645,591	27,117,003	2,835,927,351
2009	2,823,723,754	26,011,412	18,269,906	2,868,005,072
2010	3,053,863,566	29,126,521	17,996,148	3,100,986,235
2011	3,351,517,947	29,244,166	38,369,101	3,419,131,214
2012	3,351,430,408	31,807,897	17,970,250	3,401,208,555
2013	3,708,827,767	34,271,919	25,529,913	3,768,629,599
2014	3,888,166,333	35,187,183	17,850,587	3,941,204,103
2015	4,068,416,728	37,333,754	15,932,985	4,121,683,467
2016	4,248,984,127	41,936,746	14,931,267	4,305,852,140

Oregon Public Service Retirement Plan

Individual Account Program

Calendar Year	Benefits	Administrative Expenses	Refunds	Total
2007	\$ 47,529,077	\$ 7,583,898	\$ N/A	\$ 55,112,975
2008	58,765,223	8,183,279	N/A	66,948,502
2009	53,171,640	7,905,631	N/A	61,077,271
2010	95,293,228	7,822,430	N/A	103,115,658
2011	196,350,366	8,363,154	N/A	204,713,520
2012	218,180,975	5,528,973	N/A	223,709,948
2013	301,297,929	7,164,598	N/A	308,462,527
2014	332,722,945	7,315,352	N/A	340,038,297
2015	343,688,428	7,746,075	N/A	351,434,503
2016	386,689,618	9,106,820	N/A	395,796,438

Deferred Compensation Plan

Calendar Year	Benefits	Administrative Expenses	Refunds	Total
2007	\$ 50,697,210	\$ 763,382	\$ N/A	\$ 51,460,592
2008	47,955,641	795,233	N/A	48,750,874
2009	37,366,503	863,699	N/A	38,230,202
2010	46,759,679	804,345	N/A	47,564,024
2011	60,816,774	963,874	N/A	61,780,648
2012	65,498,582	783,755	N/A	66,282,337
2013	79,075,903	982,625	N/A	80,058,528
2014	92,995,075	998,023	N/A	93,993,098
2015	82,398,740	1,050,769	N/A	83,449,509
2016	81,073,521	1,374,662	N/A	82,448,183

¹Calendar year-end information is provided because earnings are distributed as of December 31.

²Balances are restated for fiscal years 2007 to 2009 due to prior period adjustments.

**Changes in Fiduciary Net Position - Retirement Programs
For the Last Ten Years Ended December 31¹:**

Defined Benefit Pension Plan²

Calendar				Net Position ⁵	
Year	Additions	Deductions ⁴	Net Change	Beginning of Year	End of Year
2007	\$ 6,348,084,048	\$ 2,699,835,318	\$ 3,648,248,730	\$ 58,687,770,801	\$ 62,336,019,531
2008	(15,837,157,118)	2,835,927,351	(18,673,084,469)	62,336,019,531	43,662,935,062
2009	8,626,823,506	2,868,005,072	5,758,818,434	43,662,935,062	49,421,753,496
2010	6,444,746,801	3,100,986,235	3,343,760,566	49,421,753,496	52,765,514,062
2011	1,798,267,289	3,419,131,214	(1,620,863,925)	52,765,514,062	51,144,650,137
2012	8,078,105,402	3,401,208,555	4,676,896,847	51,144,650,137	55,821,546,984
2013	10,110,500,938	3,768,629,598	6,341,871,340	55,821,546,984	62,163,418,324
2014	5,293,707,597	3,941,204,103	1,352,503,494	62,163,400,642	63,515,904,136
2015	2,374,654,568	4,116,424,013	(1,741,769,445)	63,515,904,136	61,774,134,691
2016	5,279,761,286	4,305,852,140	973,909,146	61,774,134,691	62,748,043,837

**Oregon Public Service Retirement Plan³
Individual Account Program**

Calendar				Net Position	
Year	Additions	Deductions	Net Change	Beginning of Year	End of Year
2007	\$ 649,052,858	\$ 55,112,975	\$ 593,939,883	\$ 1,554,469,979	\$ 2,148,409,862
2008	(204,816,680)	66,948,502	(271,765,182)	2,148,409,862	1,876,644,680
2009	940,198,020	61,077,271	879,120,749	1,876,644,680	2,755,765,429
2010	903,205,036	103,115,658	800,089,378	2,755,765,429	3,555,854,807
2011	614,258,421	204,713,520	409,544,901	3,555,854,807	3,965,399,708
2012	1,122,991,607	223,709,948	899,281,659	3,965,399,708	4,864,681,367
2013	1,357,494,695	308,462,527	1,049,032,168	4,864,681,367	5,913,713,535
2014	961,135,579	340,038,297	621,097,282	5,913,713,535	6,534,810,817
2015	737,163,726	351,434,503	385,729,223	6,534,810,817	6,920,540,040
2016	1,115,360,766	395,796,438	719,564,328	6,920,540,040	7,640,104,368

Deferred Compensation Plan

Calendar				Net Position	
Year	Additions	Deductions	Net Change	Beginning of Year	End of Year
2007	\$ 133,691,285	\$ 51,460,592	\$ 82,230,693	\$ 906,685,311	\$ 988,916,004
2008	(195,994,346)	48,750,874	(244,745,220)	988,916,004	744,170,784
2009	210,761,894	38,230,202	172,531,692	744,170,784	916,702,476
2010	150,806,848	47,564,024	103,242,824	916,702,476	1,019,945,300
2011	111,026,420	61,780,648	49,245,772	1,019,945,300	1,069,191,072
2012	183,183,231	66,282,337	116,900,894	1,069,191,072	1,186,091,966
2013	296,211,534	80,058,528	216,153,006	1,186,091,967	1,402,244,973
2014	194,684,257	93,993,098	100,691,159	1,402,244,973	1,502,936,132
2015	112,460,653	83,449,509	29,011,144	1,502,936,132	1,531,947,276
2016	192,953,262	82,448,183	110,505,079	1,531,947,276	1,642,452,355

¹Calendar year-end information is provided because earnings are distributed as of December 31.

²House Bill 3262, enacted by the 2005 Oregon Legislature, combined the OPSRP Pension Program with the existing defined benefit plan. Activity since 2004 includes activity of the OPSRP Pension Program.

³The Oregon Public Service Retirement Plan was added to the System in January 2004.

⁴Balances are restated for fiscal years 2007 to 2009 due to prior period adjustments.

⁵Balances restated for fiscal years 2013 and 2014 to correct amounts.

Oregon Public Employees Retirement System

Additions by Source - OPEB

For the Last Ten Years Ended December 31¹:

Retirement Health Insurance Account

Calendar Year	Member Contributions	Employer Contributions		Net Investment and Other Income	Total
		Dollars	Percent of Annual Covered Payroll		
2007	\$ N/A	\$ 35,457,965	0.45%	\$ 22,089,579	\$ 57,547,544
2008	N/A	28,043,517	0.34	(66,077,417)	(38,033,900)
2009	N/A	25,863,178	0.31	33,958,964	59,822,142
2010	N/A	22,156,216	0.25	26,075,309	48,231,525
2011	N/A	32,610,644	0.38	5,474,204	38,084,848
2012	N/A	48,118,569	0.59	35,088,054	83,206,623
2013	N/A	47,729,940	0.56	46,420,994	94,150,934
2014	N/A	49,466,294	0.55	25,754,870	75,221,164
2015	N/A	48,846,297	0.59	7,995,269	56,841,566
2016	N/A	48,339,520	0.50	31,003,380	79,342,900

Retiree Health Insurance Premium Account

Calendar Year	Member Contributions	Employer Contributions		Net Investment and Other Income	Total
		Dollars	Percent of Annual Covered Payroll		
2007	\$ N/A	\$ 2,148,731	0.03%	\$ 688,777	\$ 2,837,508
2008	N/A	1,867,402	0.08	(2,004,488)	(137,086)
2009	N/A	1,796,343	0.08	1,016,811	2,813,154
2010	N/A	1,458,105	0.06	659,794	2,117,899
2011	N/A	2,347,710	0.10	158,742	2,506,452
2012	N/A	3,450,509	0.15	557,438	4,007,947
2013	N/A	4,708,305	0.19	588,465	5,296,770
2014	N/A	6,378,015	0.24	361,915	6,739,930
2015	N/A	8,747,711	0.25	131,852	8,879,563
2016	N/A	11,621,895	0.40	933,866	12,555,761

Deductions by Type - OPEB**For the Last Ten Years Ended December 31¹:****Retirement Health Insurance Account**

Calendar Year	Benefits	Administrative Expenses	Refunds	Total
2007	\$ 27,244,840	\$ 888,308	\$ N/A	\$ 28,133,148
2008	27,976,500	918,244	N/A	28,894,744
2009	28,537,920	974,580	N/A	29,512,500
2010	29,066,220	973,329	N/A	30,039,549
2011	29,524,122	1,283,144	N/A	30,807,266
2012	30,375,640	837,282	N/A	31,212,922
2013	31,132,920	1,095,853	N/A	32,228,773
2014	31,636,379	1,167,459	N/A	32,803,838
2015	32,273,928	1,223,215	N/A	33,497,143
2016	32,385,680	1,206,654	N/A	33,592,334

Retiree Health Insurance Premium Account

Calendar Year	Benefits	Administrative Expenses	Refunds	Total
2007	\$ 1,923,159	\$ 111,240	\$ N/A	\$ 2,034,399
2008	1,902,292	101,664	N/A	2,003,956
2009	2,020,198	113,096	N/A	2,133,294
2010	2,664,123	106,791	N/A	2,770,914
2011	3,547,400	124,769	N/A	3,672,169
2012	3,968,267	134,246	N/A	4,102,513
2013	4,323,159	172,485	N/A	4,495,644
2014	4,615,612	180,524	N/A	4,796,136
2015	4,680,196	214,500	N/A	4,894,696
2016	4,340,503	288,507	N/A	4,629,010

¹Calendar year-end information is provided because earnings are distributed as of December 31.

Oregon Public Employees Retirement System

Change in Fiduciary Net Position - OPEB

For the Last Ten Years Ended December 31¹:

Retirement Health Insurance Account

Calendar Year	Additions	Deductions	Net Change	Net Position	
				Beginning of Year	End of Year
2007	\$ 57,547,544	\$ 28,133,148	\$ 29,414,396	\$ 221,345,562	\$ 250,759,958
2008	(38,033,900)	28,894,744	(66,928,644)	250,759,958	183,831,314
2009	59,822,142	29,512,500	30,309,642	183,831,314	214,140,956
2010	48,231,525	30,039,549	18,191,976	214,140,956	232,332,932
2011	38,084,848	30,807,266	7,277,582	232,332,932	239,610,514
2012	83,206,623	31,212,922	51,993,701	239,610,514	291,604,215
2013	94,150,934	32,228,773	61,922,161	291,604,215	353,526,376
2014	75,221,164	32,803,838	42,417,326	353,526,376	395,943,702
2015	56,841,566	33,497,143	23,344,423	395,943,702	419,288,125
2016	79,342,900	33,592,334	45,750,566	419,288,125	465,038,691

Retiree Health Insurance Premium Account

Calendar Year	Additions	Deductions	Net Change	Net Position	
				Beginning of Year	End of Year
2007	\$ 2,837,508	\$ 2,034,399	\$ 803,109	\$ 7,016,206	\$ 7,819,315
2008	(137,086)	2,003,956	(2,141,042)	7,819,315	5,678,273
2009	2,813,154	2,133,294	679,860	5,678,273	6,358,133
2010	2,117,899	2,770,914	(653,015)	6,358,133	5,705,118
2011	2,506,452	3,672,169	(1,165,717)	5,705,118	4,539,401
2012	4,007,946	4,102,513	(94,567)	4,539,401	4,444,834
2013	5,296,770	4,495,644	801,126	4,444,834	5,245,960
2014	6,739,930	4,796,136	1,943,794	5,245,960	7,189,754
2015	8,879,563	4,894,696	3,984,867	7,189,754	11,174,621
2016	12,555,761	4,629,010	7,926,751	11,174,621	19,101,372

¹Calendar year-end information is provided because earnings are distributed as of December 31.

**Schedule of Earnings and Crediting
at December 31¹:**

Calendar Year	Tier One Earnings/(Loss) Available for Crediting	Credited			Variable Earnings/ (Loss) Credited	Individual Account Program
		Tier One	Tier Two			
2007	10.22 %	7.97 %	9.47 %	1.75 %	9.46 %	
2008	(27.18)	8.00	(27.18)	(43.71)	(26.75)	
2009	19.12	8.00	19.12	37.57	18.47	
2010	12.65	8.00	12.44	15.17	12.13	
2011	2.21	8.00	2.21	(7.80)	2.15	
2012	14.53	8.00	14.68	18.43	14.09	
2013	15.76	8.00	15.62 ²	25.74 ³	15.59	
2014	7.24	7.75	7.24	4.29	7.05	
2015	1.87	7.75	1.87	(1.61)	1.85	
2016	7.15	7.50	7.15	8.76	7.13	

¹Calendar year-end information is provided because earnings are credited as of December 31.

²Earnings rate includes allocation from settlement of *Murray v. PERB* litigation.

³Earnings rate includes allocation from settlement of *White, et al. v. PERB* litigation.

**Schedule of Benefit Expenses By Type -
Defined Benefit Pension Plan
For the Years Ended June 30:**

Fiscal Year	Service Benefits	Disability Benefits		Retirement Benefit Totals	Death Benefits	Refunds ¹		Total
		Duty	Non-Duty			Normal	Death	
2008	\$ 2,646,746,186	\$ 13,363,139	\$ 96,763,796	\$ 2,756,873,121	\$ 11,432,179	\$ 50,660,781	\$ N/A	\$ 2,818,966,081
2009	2,672,728,881	14,270,486	100,050,006	2,787,049,373	3,169,091	36,548,963	N/A	2,826,767,427
2010	2,795,098,921	15,188,097	101,866,823	2,912,153,841	3,414,960	25,692,404	N/A	2,941,261,205
2011	3,074,390,373	15,967,087	105,974,442	3,196,331,902	7,606,867	17,203,318	9,283,908	3,230,425,995
2012	3,166,918,154	16,449,589	108,423,907	3,291,791,650	3,918,168	27,966,120	6,054,330	3,329,730,268
2013	3,422,618,167	17,242,718	111,616,337	3,551,477,222	4,582,777	10,074,038	7,365,530	3,573,499,567
2014	3,701,010,685	17,739,646	113,317,283	3,832,067,614	5,802,797	13,614,833	11,945,261	3,863,430,505
2015	3,790,050,384	17,943,338	113,129,130	3,921,122,852	6,044,180	7,283,720	9,197,495	3,943,648,247
2016	4,045,951,252	18,896,881	118,534,433	4,183,382,566	9,925,146	6,342,385	6,812,193	4,206,462,290
2017	4,204,153,060	18,965,495	118,479,583	4,341,598,137	4,684,598	6,589,962	9,371,782	4,362,244,479

¹Prior to fiscal year 2011 information to present refunds by type was not available and was combined in Normal Refunds.

**Schedule of Average OPEB Benefits for Retirement Health Insurance Account¹
For the Year Ended June 30, 2017:**

Years Credited Service	8+
Average Monthly Benefit	\$60.00
Final Average Salary	N/A
Number of Active Retirees	44,967

**Schedule of Average OPEB Benefits for Retiree Health Insurance Premium Account¹
For the Year Ended June 30, 2017:**

	Years Credited Service						Total
	8 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 +	
Average Monthly Benefit	\$ 173	\$ 208	\$ 243	\$ 277	\$ 312	\$ 347	\$ 318
Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Active Retirees	5	38	88	131	253	662	1,177

¹ Effective years of retirement and final average salary are not available for OPEB.

Oregon Public Employees Retirement System

Schedule of Average Defined Benefit Pension Payments

Retirement Effective Dates July 1, 2007 to June 30, 2017	Years Credited Service							Total
	0-5	6-10	11-15	16-20	21-25	26-30	31+	
2008 Average Monthly Benefit	\$1,021	\$907	\$1,390	\$1,848	\$2,708	\$4,369	\$5,447	\$2,673
Final Average Salary	\$2,791	\$3,242	\$3,820	\$4,240	\$4,558	\$5,209	\$5,678	\$4,414
Number of Active Retirees	291	522	607	841	729	1,142	329	4,461
2009 Average Monthly Benefit	\$990	\$979	\$1,329	\$1,894	\$2,717	\$4,233	\$5,465	\$2,690
Final Average Salary	\$3,254	\$3,431	\$3,841	\$4,362	\$4,792	\$5,293	\$5,766	\$4,561
Number of Active Retirees	288	535	605	771	708	1,034	442	4,383
2010 Average Monthly Benefit	\$960	\$1,034	\$1,303	\$1,877	\$2,652	\$4,121	\$5,257	\$2,651
Final Average Salary	\$3,183	\$3,677	\$3,918	\$4,508	\$5,048	\$5,440	\$5,838	\$4,734
Number of Active Retirees	347	604	640	883	878	1,148	546	5,046
2011 Average Monthly Benefit	\$895	\$988	\$1,340	\$1,834	\$2,574	\$3,950	\$5,331	\$2,594
Final Average Salary	\$3,265	\$3,668	\$4,087	\$4,666	\$5,245	\$5,877	\$6,241	\$4,944
Number of Active Retirees	382	759	893	1,058	1,109	1,226	787	6,214
2012 Average Monthly Benefit	\$611	\$933	\$1,307	\$1,699	\$2,329	\$3,512	\$4,949	\$2,368
Final Average Salary	\$3,721	\$3,975	\$4,445	\$4,894	\$5,603	\$6,190	\$6,878	\$5,279
Number of Active Retirees	324	866	1,016	1,063	1,250	1,206	879	6,604
2013 Average Monthly Benefit	\$655	\$979	\$1,360	\$1,785	\$2,420	\$3,565	\$5,139	\$2,413
Final Average Salary	\$3,785	\$3,947	\$4,504	\$5,049	\$5,891	\$6,565	\$6,909	\$5,404
Number of Active Retirees	383	957	1,108	1,117	1,343	1,165	939	7,012
2014 Average Monthly Benefit	\$709	\$1,012	\$1,307	\$1,667	\$2,359	\$3,403	\$5,078	\$2,320
Final Average Salary	\$3,754	\$3,786	\$4,430	\$5,028	\$5,860	\$6,351	\$6,917	\$5,318
Number of Active Retirees	403	1,035	1,137	1,237	1,448	1,246	928	7,434
2015 Average Monthly Benefit	\$583	\$796	\$1,191	\$1,660	\$2,253	\$3,323	\$5,070	\$2,172
Final Average Salary	\$4,018	\$3,887	\$4,539	\$5,159	\$5,733	\$6,497	\$7,310	\$5,391
Number of Active Retirees	307	848	1,022	1,118	1,151	1,104	643	6,193
2016 Average Monthly Benefit	\$703	\$850	\$1,224	\$1,710	\$2,279	\$3,385	\$5,139	\$2,317
Final Average Salary	\$3,795	\$3,942	\$4,572	\$5,219	\$5,848	\$6,762	\$7,297	\$5,543
Number of Active Retirees	334	863	1,008	1,138	1,249	1,291	803	6,686
2017 Average Monthly Benefit	\$669	\$986	\$1,292	\$1,740	\$2,447	\$3,425	\$5,393	\$2,478
Final Average Salary	\$3,855	\$4,008	\$4,654	\$5,460	\$6,150	\$7,010	\$8,053	\$5,846
Number of Active Retirees	392	910	1,083	1,195	1,166	1,369	1,021	7,136

Oregon Public Employees Retirement System

Schedule of Benefit Recipients by Benefit Type For the Year Ended June 30, 2017

Monthly Benefit Amount	Number of Retirees	Type of Retirement *					Refund Annuity	Annuity Options **				Lump-Sum Options **		
		1	2	3	4	5		1	2	3	4	1	2	3
\$ 1-500	18,322	14,629	74	147	3,021	451	1,598	5,522	4,854	1,076	828	2,282	1,740	422
501-1000	20,770	16,978	119	598	2,405	670	2,228	6,873	6,375	1,978	1,024	1,099	939	254
1001-1500	17,449	14,408	85	661	1,759	536	1,734	5,427	5,876	1,866	803	762	763	218
1501-2000	14,674	12,316	66	590	1,289	413	1,475	4,176	5,264	1,643	626	621	688	181
2001-2500	12,582	10,781	84	474	952	291	1,234	3,495	4,458	1,495	491	521	744	144
2501-3000	10,360	9,052	51	352	665	240	983	2,879	3,745	1,257	382	426	565	123
3001-3500	8,983	8,043	60	242	523	115	823	2,419	3,431	1,215	352	281	370	92
3501-4000	7,801	7,165	36	151	389	60	731	2,058	3,232	1,075	286	152	211	56
4001-4500	6,864	6,399	26	116	287	36	518	1,806	3,027	1,010	262	97	108	36
4501-5000	5,989	5,673	17	57	216	26	463	1,534	2,666	955	206	52	81	32
5001-5500	4,826	4,554	10	49	199	14	363	1,165	2,246	804	148	21	64	15
5501-6000	3,587	3,399	10	23	140	15	249	905	1,658	598	128	22	21	6
6000+	8,808	8,371	16	42	361	18	486	1,791	4,316	1,842	251	28	76	18
Totals	141,015	121,768	654	3,502	12,206	2,885	12,885	40,050	51,148	16,814	5,787	6,364	6,370	1,597

* Type of Retirement

- 1 - Normal
- 2 - Duty Disability
- 3 - Non-Duty Disability
- 4 - Survivor Payment
- 5 - Alternate Payee

** Annuity and Lump-Sum Options

- 1 - No benefit for beneficiary
- 2 - Beneficiary receives same monthly benefit for life
- 3 - Beneficiary receives half the monthly benefit for life
- 4 - 15-year certain

Schedule of Retirement System Membership at December 31:

	1985	1990	1995	2000	2005	2010	2015
State Agencies	37,824	46,187	45,068	42,434	38,076	48,018	47,331
School Districts	47,590	48,144	55,734	63,133	56,756	79,798	66,184
Political Subdivisions	26,238	33,177	40,635	53,291	50,085	65,332	54,662
Inactive Members	15,920	23,225	32,033	44,830	47,289	40,481	42,849
Total Non-Retired	127,572	150,733	173,470	203,688	192,206	233,629	211,026
Retired Members and Beneficiaries	46,181	55,540	64,796	82,355	101,213	110,573	136,298
Total Membership	173,753	206,273	238,266	286,043	293,419	344,202	347,324
Administrative Expense ¹	\$2,905,072	\$8,901,091	\$13,500,677	\$24,358,550	\$40,056,600	\$38,029,071	\$47,934,435
Pension Roll (one month)	\$18,083,614	\$33,175,888	\$58,457,531	\$122,467,087	\$202,633,214	\$265,490,496	\$333,044,107

¹ Fiduciary Funds only.

Schedule of Retirement System Membership at June 30:

	2011	2012	2013	2014	2015	2016	2017
State Agencies	46,739	45,953	45,019	45,774	47,620	47,868	48,099
School Districts	75,915	67,172	63,297	64,824	66,434	68,648	69,510
Political Subdivisions	60,695	56,656	54,943	54,376	54,536	55,160	55,696
Inactive Members	41,832	42,286	44,819	43,646	44,786	45,925	45,709
Total Non-Retired	225,181	212,067	208,078	208,620	213,376	217,601	219,014
Retired Members and Beneficiaries	114,252	119,346	123,827	129,138	132,506	136,435	136,435
Total Membership	339,433	331,413	331,905	337,758	345,882	354,036	355,449
Administrative Expense ¹	\$38,594,620	\$42,254,365	\$42,792,995	\$40,395,370	\$45,791,942	\$51,763,886	\$55,931,659
Pension Roll (one month)	\$270,111,478	\$284,236,712	\$299,997,147	\$303,834,899	\$317,090,746	\$337,405,252	\$355,414,652

¹ Fiduciary Funds only.

Oregon Public Employees Retirement System

Schedule of Principal Participating Employers

Current Fiscal Year and Nine Years Ago

	2017			2008		
	Number of Current Employees	Rank	Percent of Total System	Number of Current Employees	Rank	Percent of Total System
State of Oregon	48,099	1	27.75 %	41,872	1	25.01 %
Portland Public Schools	5,667	2	3.27	5,413	3	3.23
Salem Keizer Public Schools	5,298	3	3.06	4,505	4	2.69
Multnomah County	5,020	4	2.90	4,324	5	2.58
City of Portland	4,836	5	2.79	4,055	7	2.42
Beaverton School District	4,695	6	2.71	4,289	6	2.56
Oregon Health and Science University	3,771	7	2.18	5,953	2	3.56
Hillsboro School District 1J	2,414	8	1.39	2,286	9	1.37
Portland Community College	2,355	9	1.36	2,377	8	1.42
Clackamas County	1,979	10	1.14	—	—	—
Eugene School District 4J	—	—	—	1,993	10	1.19
All Others*	89,171		51.45	90,385		53.98
Total	173,305		100.00 %	167,452		100.00 %

* All Others consisted of:

Counties	10,932	6.31 %	12,774	7.63 %
Municipalities	12,945	7.47	13,049	7.79
School Districts	51,436	29.68	51,354	30.67
Community Colleges	5,708	3.29	6,569	3.92
Other Political Subdivisions	8,150	4.70	6,639	3.96
Total All Others	89,171	51.45 %	90,385	53.98 %

Schedule of Participating Employers (904)

State (108)

Appraiser Certification and Licensure Board
 Board of Accountancy
 Board of Architect Examiners
 Board of Chiropractic Examiners
 Board of Examiners for Engineering and Land Surveying
 Board of Geologists Examiners
 Board of Optometry
 Board of Parole and Post-Prison Supervision
 Board of Pharmacy
 Board of Psychologist Examiners
 Bureau of Labor and Industries
 Commission on Indian Services
 Commission on Judicial Fitness and Disability
 Construction Contractors Board
 Department of Administrative Services
 Department of Agriculture
 Department of Aviation
 Department of Consumer and Business Services
 Department of Corrections
 Department of Education
 Department of Energy
 Department of Environmental Quality
 Department of Human Services
 Department of Justice
 Department of Land Conservation and Development
 Department of Military-Federal Employees
 Department of Revenue
 Department of State Lands
 Department of State Police
 Department of Transportation
 Department of Veterans' Affairs
 Department Of Education Coordinating Commission
 District Attorneys Department
 Eastern Oregon University
 Employment Department
 Employment Relations Board
 Forestry Department
 Geology and Mineral Industries
 Health Related Licensing Boards
 Judicial Department
 Land Use Board of Appeals
 Landscape Contractors Board
 Legislative Administration Board (Committee)
 Legislative Assembly
 Legislative Committees
 Legislative Fiscal Office
 Long Term Care Ombudsman
 Military Department
 Office of Legislative Counsel
 Office of the Governor

Office of the State Treasurer
 Oregon Advocacy Commission Office
 Oregon Beef Council
 Oregon Board of Dentistry
 Oregon Board of Licensed Professional Counselors and Therapists
 Oregon Board of Massage Therapists
 Oregon Board of Medical Examiners
 Oregon Business Development Department
 Oregon Commission for the Blind
 Oregon Corrections Enterprises
 Oregon Criminal Justice Commission
 Oregon Dairy Products Commission
 Oregon Department of Fish and Wildlife
 Oregon Dungeness Crab Commission
 Oregon Education Investment Board
 Oregon Film and Video
 Oregon Forest Resources Institute
 Oregon Government Ethics Commission
 Oregon Health Authority
 Oregon Hop Commission
 Oregon Housing and Community Services
 Oregon Institute of Technology
 Oregon Liquor Control Commission
 Oregon Parks and Recreation Department
 Oregon Patient Safety Commission
 Oregon Potato Commission
 Oregon Racing Commission
 Oregon Salmon Commission
 Oregon State Bar
 Oregon State Bar Professional Liability Fund
 Oregon State Board of Nursing
 Oregon State Library
 Oregon State University
 Oregon Tourism Commission
 Oregon Trawl Commission
 Oregon Watershed Enhancement Board
 Oregon Wheat Commission
 Oregon Youth Authority
 Physical Therapist Licensing Board
 Portland State University
 Psychiatric Security Review Board
 Public Defense Services Commission
 Public Employees Retirement System
 Public Safety Standards and Training
 Public Utility Commission
 Real Estate Agency
 Secretary of State
 Southern Oregon University
 State Accident Insurance Fund
 State Board of Clinical Social Workers
 State Board of Tax Practitioners
 State Lottery Commission
 State Marine Board
 Teacher Standards and Practices Commission
 Travel Information Council
 University of Oregon
 Water Resources Department

Western Oregon University

Political Subdivisions (485)

Adair Village, City of
 Albany, City of
 Amity Fire District
 Amity, City of
 Applegate Valley RFPD
 Arch Cape Service District
 Ashland Parks Commission
 Ashland, City of
 Astoria, City of
 Athena, City of
 Aumsville RFPD
 Aumsville, City of
 Aurora RFPD
 Aurora, City of
 Baker County
 Baker County Library District
 Baker Valley Irrigation District
 Baker, City of
 Bandon, City of
 Banks Fire District 13
 Banks, City of
 Bay City, City of
 Beaverton, City of
 Bend Metropolitan Park and Recreation District
 Bend, City of
 Benton County
 Black Butte Ranch RFPD
 Black Butte Ranch Service District
 Boardman RFPD
 Boardman, City of
 Brookings, City of
 Brownsville RFPD
 Burns, City of
 Burnt River Irrigation District
 Butte Falls, Town of
 Canby FPD 62
 Canby Utility Board
 Canby, City of
 Cannon Beach RFPD
 Cannon Beach, City of
 Canyon City, Town of
 Canyonville, City of
 Carlton, City of
 Cascade Locks, City of
 Cave Junction, City of
 Central Oregon Coast Fire and Rescue District
 Central Oregon Intergovernmental Council
 Central Oregon Irrigation District
 Central Oregon Regional Housing Authority
 Central Point, City of
 Charleston RFPD
 Chetco Community Public Library Board
 Chiloquin, City of
 Chiloquin-Agency Lake RFPD

Oregon Public Employees Retirement System

City County Insurance Services
City of Forest Grove
Clackamas County
Clackamas County Fair
Clackamas County Fire District 1
Clackamas County Vector Control District
Clackamas River Water
Clackamas River Water Providers
Clatskanie Library District
Clatskanie People's Utility District
Clatskanie RFPD
Clatskanie, City of
Clatsop County
Clean Water Services
Cloverdale RFPD
Coburg RFPD
Coburg, City of
Colton RFPD 70
Columbia City, City of
Columbia County
Columbia County 911 Communications
District
Columbia Drainage Vector Control District
Columbia River Fire and Rescue
Columbia River PUD
Community Services Consortium
Condon, City of
Coos Bay, City of
Coos County
Coos County Airport District
Coquille, City of
Corbett Water District
Cornelius, City of
Corvallis, City of
Cottage Grove, City of
Crescent RFPD
Creswell, City of
Crook County
Crook County RFPD 1
Crooked River Ranch RFPD
Crystal Springs Water District
Culver, City of
Curry County
Curry Public Library District
Dallas, City of
Dayton, City of
Depoe Bay RFPD
Depoe Bay, City of
Deschutes County
Deschutes County RFPD 2
Deschutes Public Library District
Deschutes Valley Water District
Dexter RFPD
Douglas County
Douglas County RFPD 2
Douglas County Soil and Water
Conservation District
Drain, City of
Dufur, City of
Dundee, City of
Dunes City, City of
Durham, City of
Eagle Point, City of
East Fork Irrigation District
East Umatilla County RFPD
Echo, City of
Elgin, City of
Elkton, City of
Enterprise, City of
Estacada Cemetery Maintenance District
Estacada RFD 69
Estacada, City of
Eugene Water and Electric Board
Eugene, City of
Fairview Water District
Fairview, City of
Falls City, City of
Farmers Irrigation District
Fern Ridge Community Library
Florence, City of
Fossil, City of
Garibaldi, City of
Gaston RFPD
Gaston, City of
Gearhart, City of
Gervais, City of
Gilliam County
Gladstone, City of
Glide RFPD
Gold Beach, City of
Gold Hill, City of
Goshen RFPD
Grant County
Grants Pass Irrigation District
Grants Pass, City of
Greater St. Helens Parks and Recreation
District
Green Sanitary District
Gresham, City of
Halsey, City of
Halsey-Shedd RFPD
Happy Valley, City of
Harbor Water PUD
Harney County
Harney Health District
Harrisburg Fire and Rescue
Harrisburg, City of
Helix, City of
Heppner, City of
Hermiston, City of
High Desert Park and Recreation District
Hillsboro, City of
Hines, City of
Hood River County
Hood River, City of
Hoodland RFD 74
Horsefly Irrigation District
Housing Authority of Clackamas County
Housing Authority of Jackson County
Housing Authority of Portland
Hubbard RFPD
Hubbard, City of
Huntington, City of
Ice Fountain Water District
Idanha-Detroit Rural Fire Protection District
Illinois Valley RFPD
Imbler RFPD
Imbler, City of
Independence, City of
Irrigon, City of
Jackson County
Jackson County Fire District 3
Jackson County Fire District 4
Jackson County Fire District 5
Jackson County Fire District 6
Jackson County Vector Control District
Jacksonville, City of
Jefferson County
Jefferson County EMS District
Jefferson County Library District
Jefferson County RFPD 1
Jefferson County SWCD
Jefferson RFPD
Jefferson, City of
John Day, City of
Jordan Valley, City of
Joseph, City of
Josephine County
Judges PERS
Junction City RFPD
Junction City, City of
Keizer RFPD
Keizer, City of
Keno RFPD
King City, City of
Klamath County
Klamath County Emergency Communications
District
Klamath County Fire District 1
Klamath Falls, City of
Klamath Housing Authority
Klamath Vector Control District
Knappa Svensen Burnside RFPD
La Grande Rural Fire Protection District
La Grande, City of
La Pine RFPD
Lafayette, City of
Lake Chinook Fire And Rescue District
Lake County
Lake County Library District
Lake Oswego, City of
Lakeside Water District
Lakeside, City of
Lakeview, Town of
Lane Council of Governments
Lane County
Lane Fire Authority
League of Oregon Cities
Lebanon Aquatic District
Lebanon RFPD
Lebanon, City of
Lincoln City, City of
Lincoln County

Oregon Public Employees Retirement System

Sweet Home Cemetery Maintenance District	Willamina, City of	Clackamas County ESD
Sweet Home Fire and Ambulance District	Wilsonville, City of	Clackamas CSD 108
Sweet Home, City of	Winchester Bay Sanitary District	Clackamas CSD 115
Talent Irrigation District	Winston, City of	Clackamas CSD 12
Talent, City of	Winston-Dillard Fire District	Clackamas CSD 3
Tangent RFPD	Winston-Dillard Water District	Clackamas CSD 35
Tigard, City of	Wood Village, City of	Clackamas CSD 46
Tillamook County Emergency Communications District	Woodburn Fire District	Clackamas CSD 53
Tillamook County Soil and Water Conservation District	Woodburn, City of	Clackamas CSD 62
Tillamook Fire District	Wy'East Fire District	Clackamas CSD 7J
Tillamook People's Utility District	Yachats RFPD	Clackamas CSD 86
Tillamook, City of	Yachats, City of	Clatskanie School District 6J
Toledo, City of	Yamhill Communications Agency	Clatsop CSD 10
Tri-City Water and Sanitary Authority	Yamhill County	Clatsop CSD 1C
Tri-County Cooperative Weed Management Area	Yamhill Fire Protection District	Clatsop CSD 30
Troutdale, City of	Yamhill, City of	Clatsop CSD 4
Tualatin Valley Fire and Rescue	Yoncolla, City of	Clatsop CSD 8
Tualatin Valley Irrigation District	Community Colleges (17)	Coburg Community Charter School
Tualatin Valley Water District	Blue Mountain Community College	Columbia CSD 13
Tualatin, City of	Central Oregon Community College	Columbia CSD 47 J
Turner, City of	Chemeketa Community College	Columbia CSD 502
Umatilla County	Clackamas Community College	Columbia Gorge Education Service District
Umatilla County Fire District #1	Clatsop Community College	Condon Admin. School District 25J
Umatilla County Soil and Water District	Columbia Gorge Community College	Coos CSD 13
Umatilla County Special Library District	Klamath Community College	Coos CSD 31
Umatilla RFPD 7-405	Lane Community College	Coos CSD 41
Umatilla, City of	Linn-Benton Community College	Coos CSD 54
Umatilla-Morrow Radio and Data District	Mt. Hood Community College	Coos CSD 8
Vale, City of	Oregon Coast Community College	Coos CSD 9
Valley View Cemetery Maintenance District	Portland Community College	Crater Lake Charter Academy
Veneta, City of	Rogue Community College	Crook CSD
Vernonia RFPD	Southwestern Oregon Community College	Curry CSD 17C
Vernonia, City of	Tillamook Bay Community College	Curry CSD 2CJ
Waldport, City of	Treasure Valley Community College	Dallas Community School
Wallowa County	Umpqua Community College	Dayton School District 8
Wallowa, City of	School Districts (294)	Deschutes CSD 1
Warrenton, City of	Alliance Charter Academy	Deschutes CSD 2J
Wasco County	Arco Iris Spanish Immersion Charter School	Deschutes CSD 6
Wasco County Soil and Water Conservation District	Armadillo Technical Institute	Douglas County ESD
Washington County	Baker CSD 16J	Douglas CSD 105
Washington County Consolidated Communications Agency	Baker CSD 30 J	Douglas CSD 116
West Extension Irrigation District	Baker CSD 5J	Douglas CSD 12
West Linn, City of	Baker CSD 61	Douglas CSD 130
West Multnomah Soil and Water Conservation District	Baker Web Academy	Douglas CSD 15
West Side Fire District	Ballston Community School	Douglas CSD 19
West Slope Water District	Beaverton School District 48J	Douglas CSD 21
West Valley Fire District	Bend International School	Douglas CSD 22
West Valley Housing Authority	Bennett Pearson Academy Charter School	Douglas CSD 32
Western Lane Ambulance District	Benton CSD 17J	Douglas CSD 34
Westfir, City of	Benton CSD 1J	Douglas CSD 4
Weston Cemetery District	Benton CSD 509J	Douglas CSD 70
Weston, City of	Benton CSD 7J	Douglas CSD 77
Wheeler, City of	Bridge Charter Academy	EagleRidge High School
Wiard Memorial Park District	Cascade Heights Public Charter School	Eddyville Charter School
Wickiup Water District	Center For Advanced Learning	Estacada Web and Early College Academy 1
	Central Curry School District 1	Forest Grove Community School
	City View Charter School	Fossil School District 21J
	Clackamas Charter Alliance 1	Four Rivers Community School
	Clackamas Charter Alliance 2	Gilliam CSD 3
		Grant County ESD

Oregon Public Employees Retirement System

Grant CSD 16J
Grant CSD 17
Grant CSD 4
Grant CSD 8
Grant School District 3
Greater Albany Public Schools 8J
Gresham Barlow Web Academy Public
Charter School
Harney CSD 10
Harney CSD 13
Harney CSD 16
Harney CSD 28
Harney CSD 3
Harney CSD 4
Harney CSD 5
Harney CSD 7
Harney CSD UH1J
Harney ESD Region 17
Harrisburg School District 7
High Desert Education Service District
Hillsboro School District 1J
Hood River CSD
Hope Chinese Charter School
Howard Street Charter School, Inc.
Inavale Community Partners
Insight School Of Oregon Charter
Ione School District
Jackson CSD 35
Jackson CSD 4
Jackson CSD 5
Jackson CSD 549C
Jackson CSD 59
Jackson CSD 6
Jackson CSD 9
Jackson CSD 91
Jackson CSD 94
Jefferson County ESD
Jefferson CSD 4
Jefferson CSD 41
Jefferson CSD 509J
Jefferson CSD 8
Jordan Valley School District 3
Josephine County UJ School District
Josephine CSD 7
Kairos PDX
Kings Valley Charter School
Klamath CSD CU
Klamath Falls City Schools
Knova Learning Oregon
Lake County ESD
Lake CSD 11C
Lake CSD 14
Lake CSD 18
Lake CSD 21
Lake CSD 7
Lane County ESD
Lane CSD 1
Lane CSD 19
Lane CSD 28J
Lane CSD 32
Lane CSD 40
Lane CSD 45J3
Lane CSD 4J
Lane CSD 52
Lane CSD 66
Lane CSD 68
Lane CSD 69
Lane CSD 71
Lane CSD 76
Lane CSD 79J
Lane CSD 90
Lane CSD 97J
Le Monde Immersion Charter School
Lewis and Clark Montessori Charter School
Lincoln CSD
Linn Benton Lincoln ESD
Linn CSD 129J
Linn CSD 55
Linn CSD 552C
Linn CSD 9
Linn CSD 95C
Logos Public Charter School
Lourdes Charter School
Luckiamute Valley Charter School
Madrone Trail Public Charter School
Malheur CSD 12
Malheur CSD 26C
Malheur CSD 29
Malheur CSD 61
Malheur CSD 66
Malheur CSD 81
Malheur CSD 84
Malheur CSD 8C
Malheur ESD Region 14
Marion CSD 1
Marion CSD 103C
Marion CSD 14CJ
Marion CSD 15
Marion CSD 24J
Marion CSD 45
Marion CSD 4J
Marion CSD 5
Marion CSD 91
Mastery Learning Institute
Molalla River Academy
Morrow CSD
Mosier Community School
Mountain View Academy
Multisensory Institute Teaching Children
Multisensory Learning Academy
Multnomah County ESD
Multnomah CSD 1
Multnomah CSD 10
Multnomah CSD 28-302 JT
Multnomah CSD 3
Multnomah CSD 39
Multnomah CSD 51JT
Multnomah CSD 7
Multnomah CSD R-40
Nixyaawii Community School
North Central ESD
North Powder School District
North Santiam School District 29J
North Wasco CSD 21
Northwest Regional ESD
Opal School
Oregon Connections Academy
Oregon Virtual Academy
Oregon Virtual Education East
Oregon Virtual Education West
Personalized Learning, Inc.
Phoenix School, The
Polk CSD 13J
Polk CSD 2
Polk CSD 21
Polk CSD 57
Portland Village School
Powell Butte Community Charter School
Renaissance Public Academy
Ridgeline Montessori Public Charter School
River's Edge Academy Charter School
Sage Community School
Sand Ridge Charter School
Sauvie Island Academy
Scappoose School District 1J
Self-Enhancement Inc.
Sheridan AllPrep Academy
Sheridan Japanese School Foundation
Sherman CSD
Sherwood Charter School
Siletz Valley Early College Academy
Siletz Valley School
Sisters Web and Early College Academy #3
South Coast ESD Region 7
South Columbia Family School
South Harney School District 33
South Wasco County School District 1
Southern Oregon ESD
Southwest Charter School
Springfield Academy Of Arts & Academics
Springwater Environmental Sciences School
Sunny Wolf Charter School
Sweet Home Charter School
The Emerson School
The Ivy School
The Lighthouse School
The Valley School of Southern Oregon
The Village School
Three Rivers Charter School
Tillamook CSD 101
Tillamook CSD 56
Tillamook CSD 9
Trillium Charter School
Umatilla County Administrative School
District 1R
Umatilla CSD 16R
Umatilla CSD 29RJ
Umatilla CSD 2R
Umatilla CSD 5
Umatilla CSD 61R
Umatilla CSD 6R
Umatilla CSD 7
Umatilla CSD 80R

Oregon Public Employees Retirement System

Umatilla CSD 8R
Umatilla Morrow ESD
Union CSD 1
Union CSD 11
Union CSD 15
Union CSD 23
Union CSD 5
Wallowa County Region 18 ESD
Wallowa CSD 12
Wallowa CSD 21
Wallowa CSD 54
Wallowa CSD 6
Wasco CSD 29
Washington CSD 13
Washington CSD 15
Washington CSD 23J
Washington CSD 511JT
Washington CSD 88J
West Lane Technical Learning Center
Wheeler CSD 1
Wheeler CSD 55U
Willamette ESD
Woodland Charter School
Yamhill CSD 1
Yamhill CSD 29JT
Yamhill CSD 30-44-63J
Yamhill CSD 40
Yamhill CSD 48J
Yamhill CSD 4J

